A. A. R. Mechanical and P. & S. Divisions Committees Reports

JULY 1, 1944

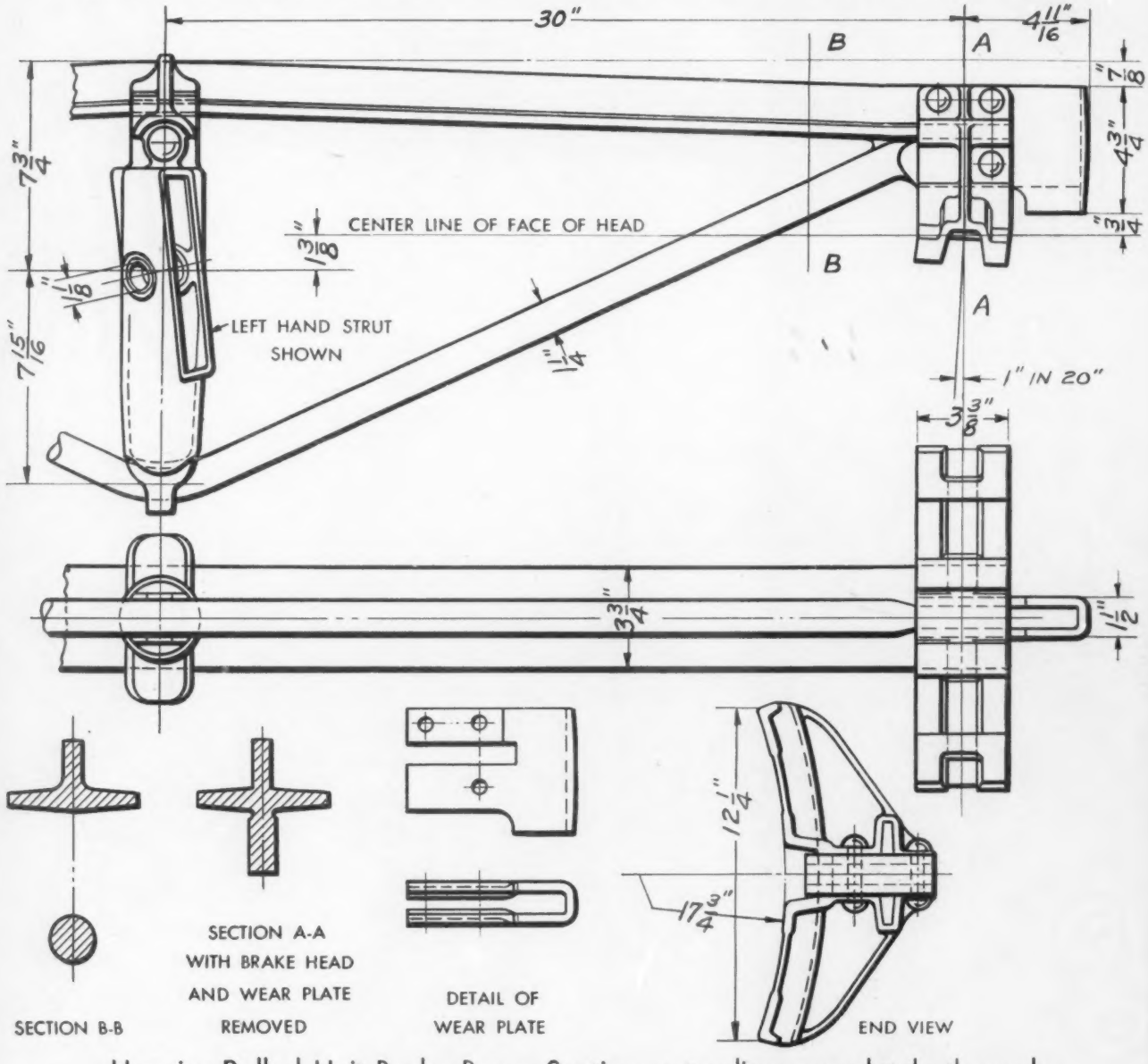
Railway Age

UNIT TRUCK

ANNOUNCES

TF 1 & 2

AN IMPROVED UNIT BRAKE BEAM



Heavier Rolled Unit Brake Beam Section extending completely through the brake head. Improved Brake Head and Wear Plate Assembly.

A Better Brake Beam for the most talked of Truck in America.

UNIT TRUCK CORPORATION

140 CEDAR STREET NEW YORK 6, N. Y.

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 117, No. 1.

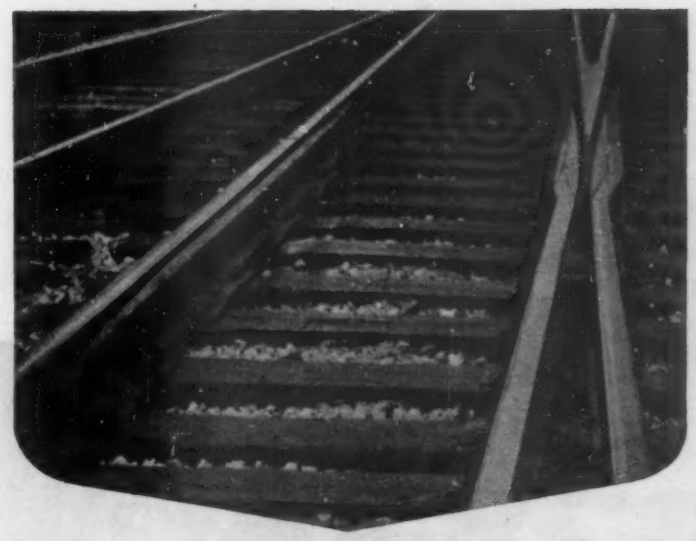
2 STANDOUTS for today's traffic

New Century Switch Stand

The New Century Switch Stand has had a long career. First manufactured more than 50 years ago, it has met the needs of American railroads with very few changes in basic design—evidence of its soundness and durability. Some New Centuries still in use were first placed in service 25, 30, or 35 years ago.

The counterweighted throwing lever of the New Century operates parallel to the rail. This switch stand is featured by ease of installation and maintenance, and all parts are interchangeable with the corresponding parts of older models.

The New Century is recommended for use with heavy rail at all points on main lines and branch lines, and in yards.



Bethlehem Hook Flange Guard Rail

Here's a guard rail that's virtually foolproof. The hook flange fits under the running rail in such a way that the weight of the train keeps the guard rail from overturning, regardless of side thrust. Moreover, the device is so constructed that a cushioning action results as the wheels are aligned passing the frog point, thus minimizing the danger of chipped or cracked wheels. Many installations have given 15 to 20 years of continuous service life.

The Hook Flange Guard Rail is bolted to special tie plates equipped with heavy shoulders—a positive aid to alignment.

Install this guard rail at points of heaviest service. It's built to take a beating.

Other Bethlehem Products for the Railroads

ALLOY STEELS
MAYARI R
(high-strength, low-alloy steel)
TOOL STEELS
FROGS—CROSSINGS
RAIL ANCHORS—RAIL BRACES
RAILS
TIE PLATES
BOLTS AND NUTS
SPIKES
WHEELS AND AXLES
FREIGHT CARS
LOCOMOTIVE FORGINGS
BOILER AND FIREBOX PLATES
TUBULAR PRODUCTS
BRIDGES
TRANSMISSION TOWERS

★ ★ ★ BETHLEHEM STEEL ★ ★ ★

MT.

Preparing the mold. Uniformity is assured by mechanical handling of all operations.

Pouring the iron. Bottom-pouring ladle prevents slag entering mold.

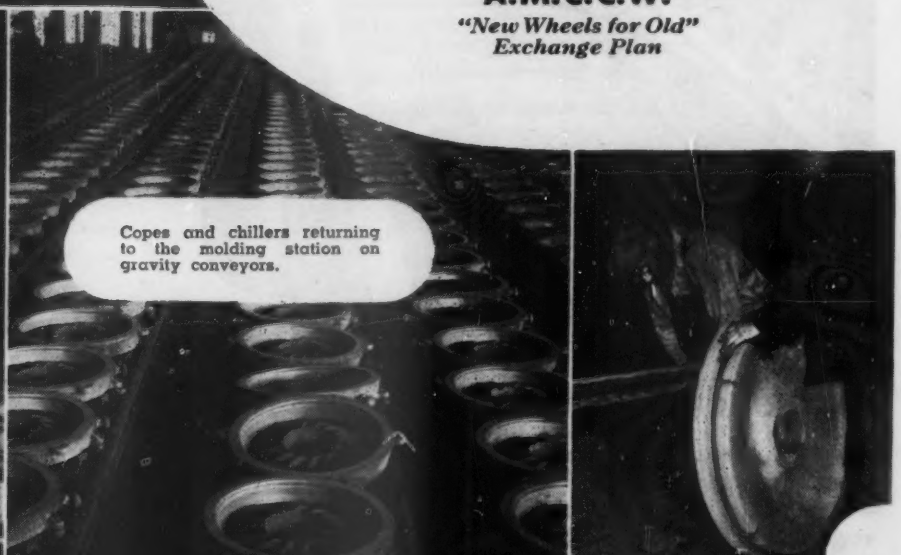
Experienced workmen, new, highly mechanized equipment, and modern, streamlined foundry methods are an unbeatable combination in the production of chilled car wheels. Mt. Vernon has all three. That's why Mt. Vernon chilled car wheels now rolling off the production lines are destined for an even longer life, more ton-miles per wheel.

Member

A.M.C.C.W.

"New Wheels for Old" Exchange Plan

One of the most important operations—*annealing*. Wheels remain in these insulated unit annealing pits 72 hours.



Copes and chillers returning to the molding station on gravity conveyors.

MT. VERNON

PORTER Better Built Equipment Established 1868

Division of H. K. PORTER

General Offices: PITTSBURGH 22

Factories at Mt. Vernon, Ill. • Pittsburgh, Pa.

VERNON

CHILLED CAR WHEELS

1150
D

92

Each wheel is thoroughly inspected by both Company and Association inspectors.

MT. VERNON CAR DIVISION:
Complete Line of Freight Cars

LOCOMOTIVE DIVISION:
Diesel, Diesel-Electric, Electric, Steam, and Fireless Steam Locomotives.

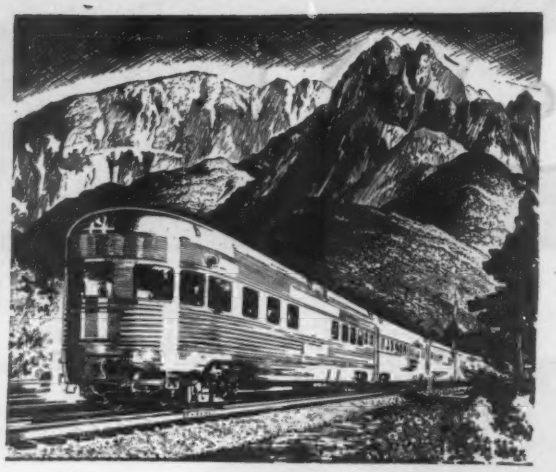
PROCESS EQUIPMENT DIVISION:
Complete Line of Chemical, Food, and Petroleum Refinery Equipment.

QUIMBY PUMP DIVISION:
Screw, Rotex, Centrifugal, Chemical Pumps.

ORDNANCE DIVISION:
Projectiles, Heavy Forgings, Breech Blocks, Winches.

CAR MFG. CO.

COMPANY, Inc.
PENNSYLVANIA



TRAFFIC AT Normal

The question is frequently asked of railroad men: "What is normal passenger traffic?"

"My idea of normal" said a Passenger Traffic V. P. "is to have 600 seats and 598 passengers on every train. The two extra seats just in case a couple more would get on."

The real answer to the question, of course, as every experienced traffic man knows, is that there is no normal. There was a downward trend in the late nineteen twenties and early thirties. There was a steady upward trend from 1935 to 1941, along with the growing public interest in stainless steel streamlined trains. And then came the deluge of war traffic.

What the immediate level will be when the war is over no one ventures to predict. Shrewd observers believe, however, that the railroads have an opportunity to hold and increase rail travel far above the volume of pre-war years. The economic condition of the country will be a factor, but not nearly so important as what the railroads themselves do to make rail travel attractive.

EDWARD G. BUDD MANUFACTURING COMPANY

Budd

PHILADELPHIA · DETROIT · NEW YORK · CHICAGO · ST. LOUIS
SAN FRANCISCO · LOS ANGELES · SEATTLE · WASHINGTON, D. C.

Originators and manufacturers of stainless steel lightweight railway passenger cars and trains . . . Inventors of the SHOTWELD system of fabricating hi-tensile steel.*

*Registered U. S. Pat. Off.

Then he said to himself

"THEY CAN NEVER BOMB THIS PLACE"

WITH 300 pound vehemence, Reich-Marshal Hermann Goering once impressed the heilers and the heiled in Berlin with this guarantee:

"THEY CAN NEVER BOMB THIS PLACE"

He was not trying to mislead.

Give him credit . . . he had figured it out as any business man would:

(a) He figured what his competition had

(b) He figured what he had

The answer was simple arithmetic . . . then, departing from arithmetic

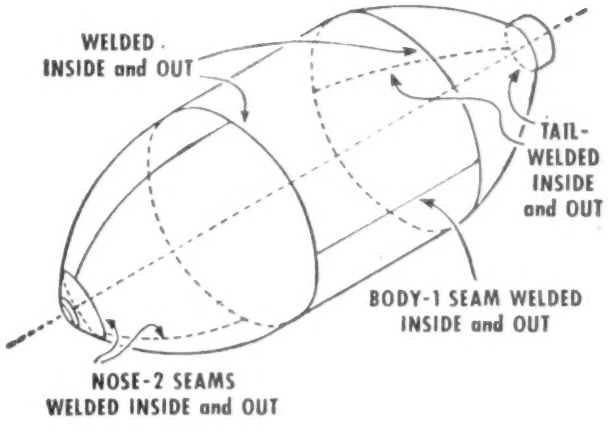
(c) He *estimated* how long it would take his competition to catch up. On *that* he went completely crackpot—unalterably haywire—irretrievably "losing his market" as they say.

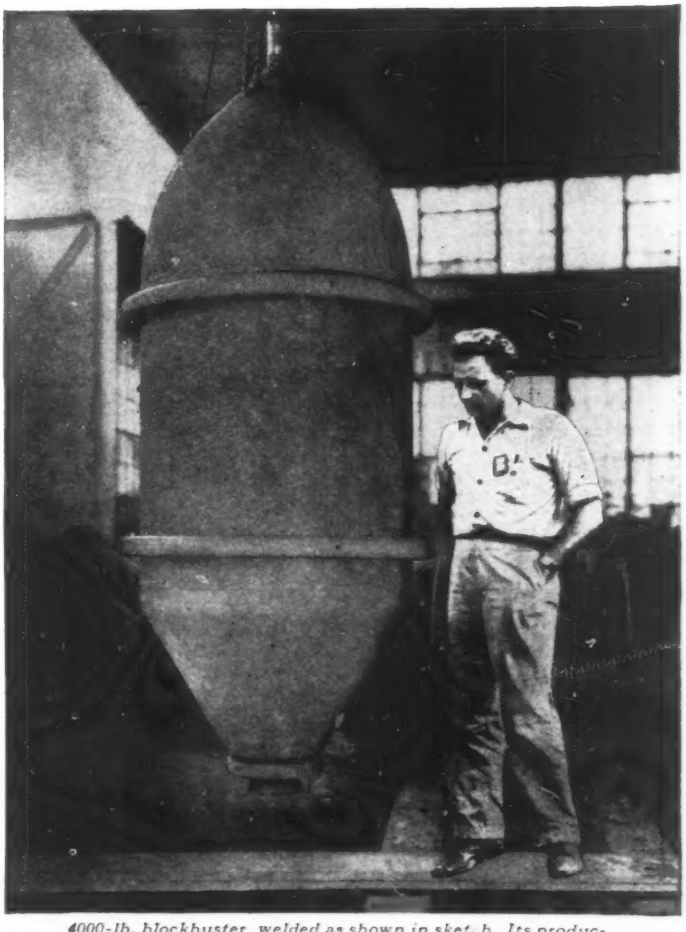
And that just proves again that NO ONE can estimate the regular step-ups in output made possible by enthused producers

. . . having recourse to a flexible production technique

. . . that keeps improving regularly.

Listen Hermann, Never say NEVER!





4000-lb. blockbuster, welded as shown in sketch. Its production has been increased by improved arc welding technique.

You're too cagey a rascal *not* to have figured that *recourse* to Arc Welding would speed America's war output. So you estimated that step up at, say, 25%.

But as it turned out, production of Berlin-busters, ships, planes, tanks and guns was stepped up another 25% and then other 25%'s by added recourses applied AFTER your "NO BOMBING" assurance.

And now, the knockout blow

. . . Lincoln introduces the New "*Fleet-Welding*" Technique

recourse to which gives additional step-ups in welding production of 25% . . . 50% . . . 100% . . . and more.

This arc welding technique, developed by Lincoln Engineers, uses *arc force* to get deeper penetration and higher welding speed for all types of joints in mild steel plate, shapes and sheet. Procedure manual with full details will be sent free to engineers and production supervisors.

There is a Lincoln Engineer near-by to assist you in applying the "Fleet-welding" Technique to war production and postwar planning. Call him or write:

THE LINCOLN ELECTRIC COMPANY • Cleveland 1, Ohio

America's greatest natural **recourse**

ARC WELDING

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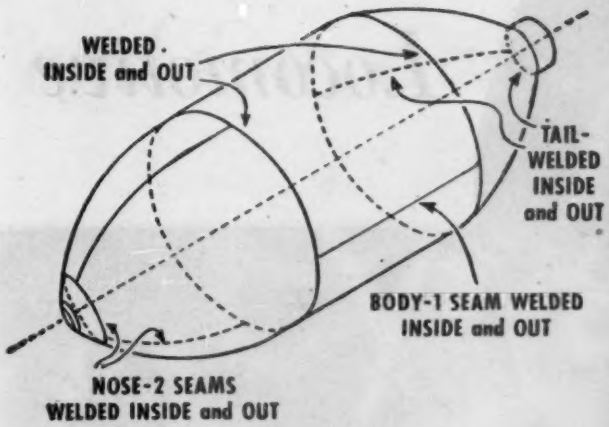

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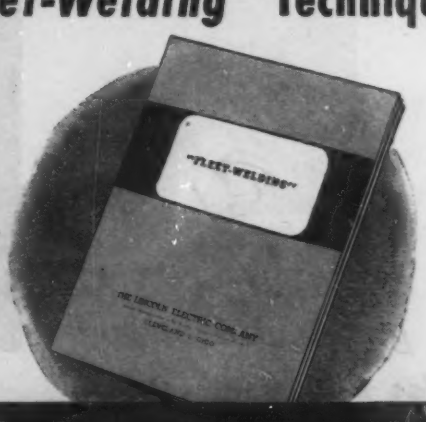


America's greatest natural **recourse**

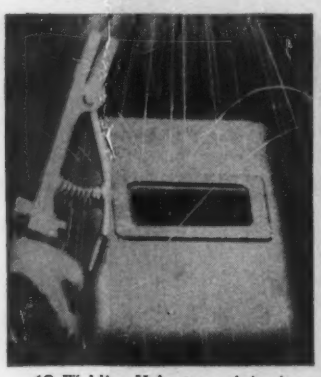
ARC WELDING

Goggles . . . Helmets . . . Respirators . . . Safety Clothing . . . Welding Glass

...Look to American Optical for the Personal Protection Equipment Your Men Need!

AO Welding Glass for welding goggles includes Noviweld-Didymium, Noviweld and Calibar—all developed by AO Scientists.

Sturdy AO Goggles, equipped with Super Armorplate lenses, offer the eye-protection miners need against flying chips.



AO Welding Helmets are designed to provide maximum protection, flexibility and comfort. Equipped with AO Filterweld Plates.

The American R-9100-T Respirator is light, allows full vision, filters out dangerous toxic dusts. Comfortable facepiece easily adjusted.

American Optical offers a complete line of comfortable protective goggles—a design for every industrial eye hazard. The worker above is protected with the AO Ful-Vue.

American Optical Company head-to-ankles protection is *stay-on-the-job insurance* for your men. AO Goggles are scientifically designed to give lightweight, comfortable protection for every type of eye hazard in your plant. AO Safety Clothing—of which there are complete lines for men and women—is made to withstand long, strenuous wear, designed and constructed to give comfortable, good-looking fits.

And in addition, American Optical offers you a quickly accessible "base of supply" for AO Safety Equipment, from which is also available the assistance you need to put these products into most effective use. These aids include informative literature, plant analysis of eye hazards, dramatic posters, quickly and easily understandable guides, a goggle adjustment training film and the services of a trained American Safety Representative.

Get in touch with your nearest American Optical Company Branch Office . . . ask to see the complete AO line.

American Optical

COMPANY

SOUTHBRIDGE, MASSACHUSETTS

Good car-lighting and air conditioning STARTS HERE

...and when it's an Exide Battery, you are assured of strong car lighting along with uniform air conditioning, even during long stops. Exide Batteries are designed to give maximum output under the heaviest strain. They handle big power loads easily, always maintaining a high voltage.

Today, with railroad traffic at its highest peak, the difference between efficient operation and poor performance lies basically in the equipment used. Over the years, Exide Batteries have proven their real value to railroad men. Always dependable, giving long-life, and constructed for simplicity of maintenance, they are a more valuable asset than ever. When you buy an Exide, you *Buy to Last.* Take care of it and *Save to Win.*

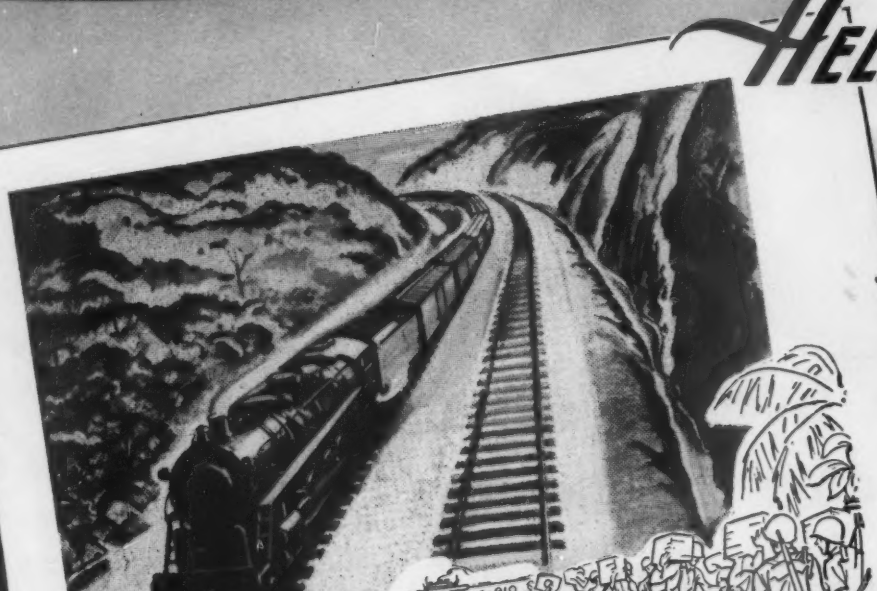
ARMY E NAVY

Exide
BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32
Exide Batteries of Canada, Limited, Toronto

PRESSED S

HELP SPEED THE



The Army Eats by the Trainload

THE American soldier's appetite is as vast as his courage.

Keeping him in beans as well as bullets is a mammoth job—and nearly *all* the food he eats is carried, part way at least, by the railroads. To feed the men in our armed forces takes 3,400 carloads of food *every week throughout the year.*

This tremendous job gets harder as the armies flow overseas—the haul of foodstuffs to the seaboard is greater.

And on top of the tremendously expanded task of the railroads in moving the men, munitions and foodstuffs of war for our own armies and our fighting allies, comes another urgent job—that of keeping things moving for you on the home front.

We must haul the gasoline and fuel that tankers no longer can carry. We must haul the anthracite you burn in your home. We must carry many more passengers. We must do all this, if possible, with a minimum of new equipment—for, like yourself, we must save vital materials.

Lehigh Valley is proud to be a partner with the other railroads in our victory assignment—to move the men and materials that will win the war. We think of you as our partners, too, and with your help, we cannot fail.

LEHIGH VALLEY RAILROAD

ONE OF AMERICA'S RAILROADS—ALL UNITED FOR VICTORY

★ ★ ★ ★ ★ ★ BUY UNITED STATES WAR SAVINGS BONDS—REGULARLY ★ ★ ★ ★ ★ ★ ★

PRESSED STEEL CAR COMPANY, INC.,

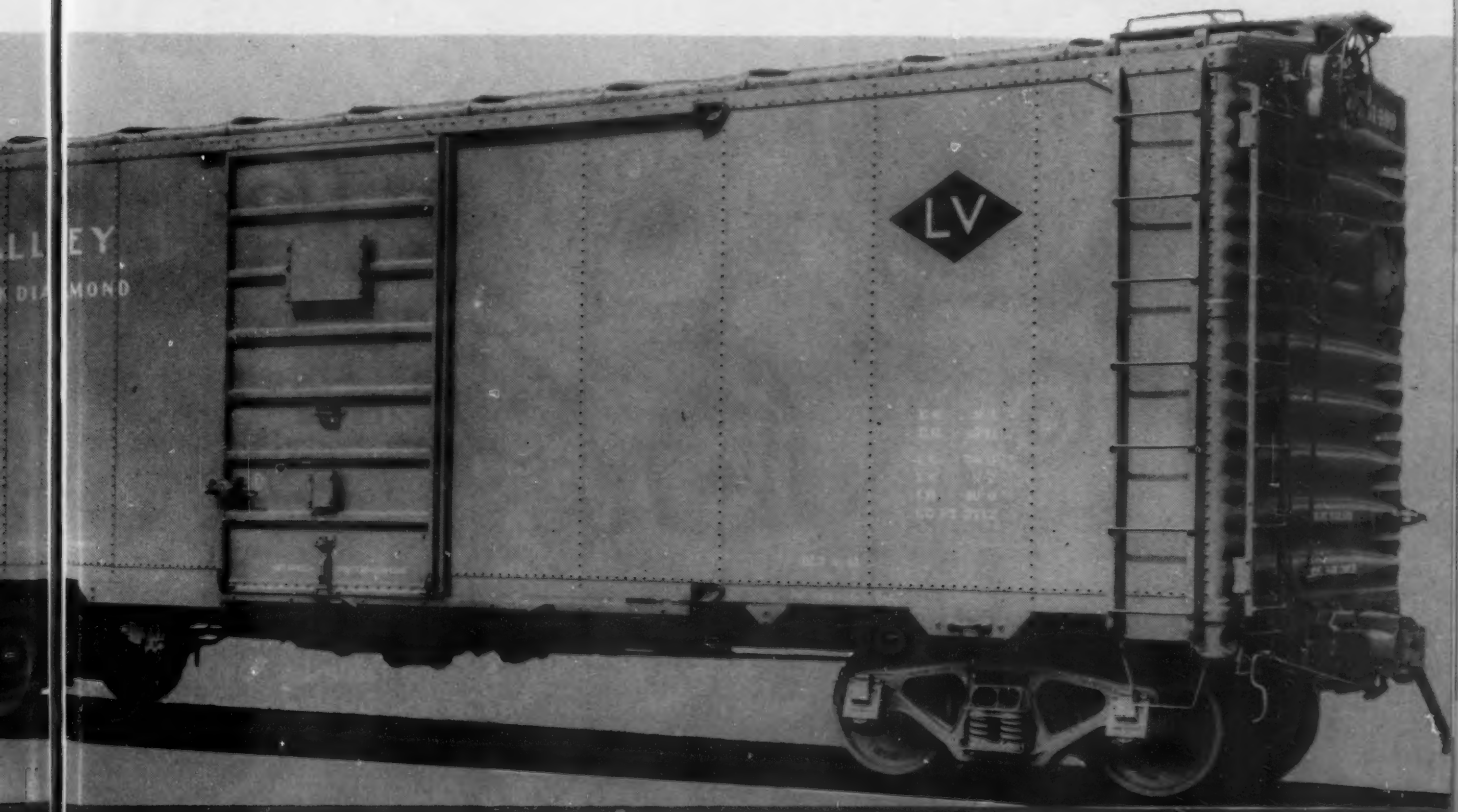
STEEL CARS

Beans and Bullets

TO OUR ARMED FORCES...

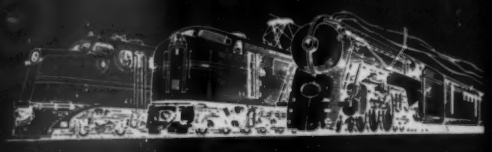
The efficient manner in which American railroads have handled the mammoth job of moving munitions and foodstuffs of war has astounded the entire world. The major role played by freight cars is quite evident. All materials and finished products for tanks, planes, guns, ships — foodstuffs, munitions, etc., are moved part way at least by rail.

Many thousands of Pressed Steel Cars of all types have helped the railroads break all traffic records and with a minimum of new equipment. Their durability, ruggedness and high quality have kept them off the rip track, and instead these super performers are delivering maximum service for longer periods of time with minimum maintenance. It is this kind of dependable service that keeps things moving on the home front and to our own armies and our fighting allies all over the world.



NEW YORK–PITTSBURGH–CHICAGO

New for All Types of Motive Power



NATHAN

SINGLE FEED
MECHANICAL
LUBRICATOR
TYPE "S"

THIS new single feed NATHAN Mechanical Lubricator is designed to provide efficient pressure lubrication for many parts on all types of railroad motive power. It is small, compact and may be applied in the cab or on the chassis close to the points to be lubricated thus eliminating the need for long oil lines.

On Diesel-Electric power the oil may be taken directly from the engine crank case thus eliminating the necessity of filling an extra oil reservoir. The pumping unit is valveless and is designed for use with pressures up to 2000 lbs. per square inch. This new lubricator may be applied in any position and can be actuated by lateral or vertical movement of the truck. On steam locomotives it offers a specially interesting application for the lubrication of stoker engines located on tenders.

NATHAN MANUFACTURING CO., 250 PARK AVE.
NEW YORK, N. Y.

Established 1864

BIG WORDS IN TRANSPORTATION'S FUTURE

INTERIOR OF VELON*

Velon is probably the most durable fabric ever made available for transportation seating!

And yet—it opens new possibilities for beauty. It's available in every possible color and color combination—and innumerable patterns. Every color of *Velon*—even the brightest and lightest—is *practical* for transportation seating under the heaviest kind of traffic. You see, *Velon* absorbs no moisture, no dirt—can be *wiped* clean and colorful as new in a few seconds. It's stainless, non-inflammable, highly resistant to greases, acids, alkalis and solvents.

Watch for *Velon's* release for civilian use. You'll soon be seeing it everywhere—because *Velon* offers a new high in eye-appeal—at a new low in maintenance cost.

P.S. For the finest in seating—make the cushioning *Foamex!* *Trademark—Processed Yarn—U.S.P.

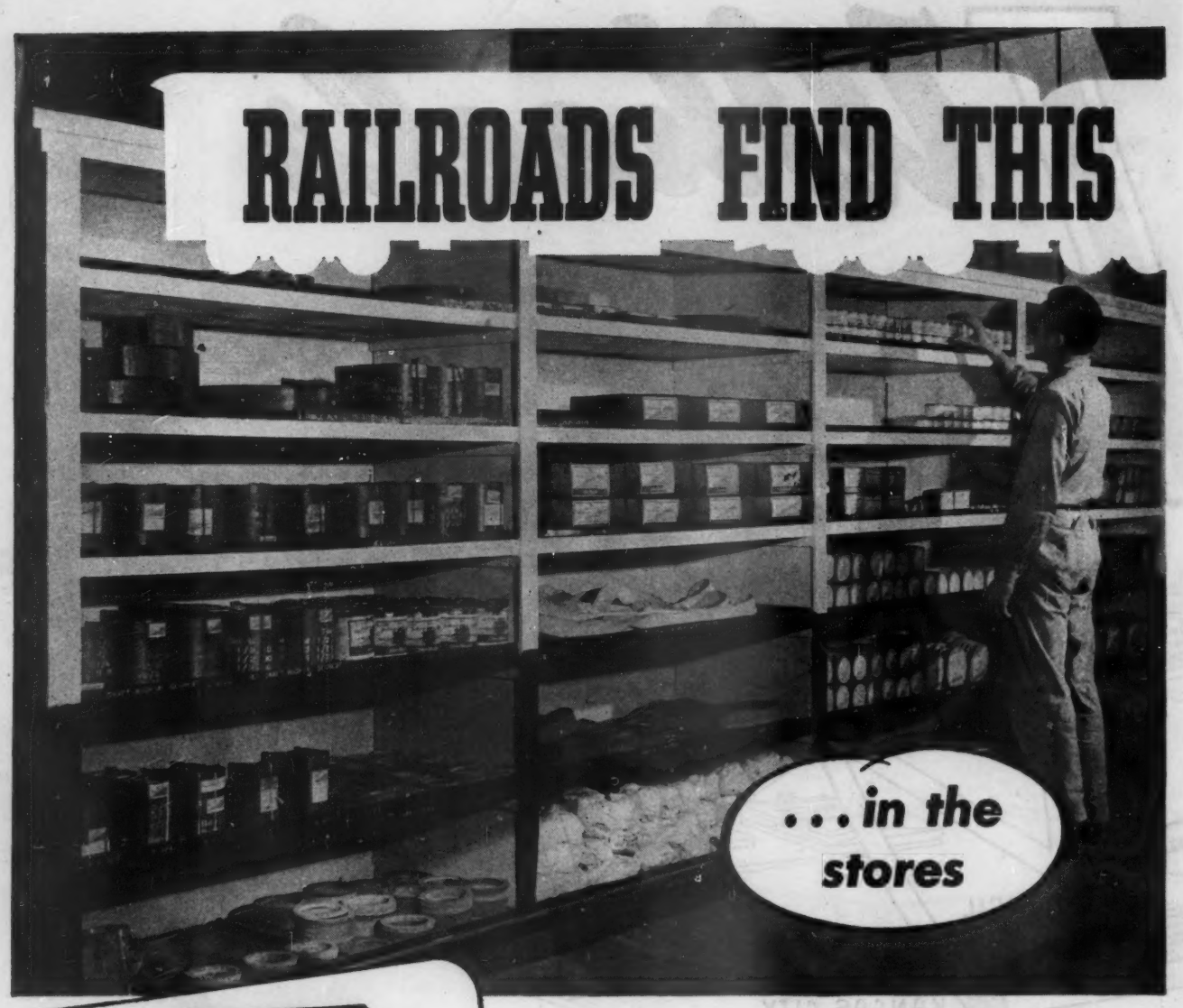
ANOTHER CONTRIBUTION TO A BETTER WAY OF LIFE by **Firestone**

For the best in music, listen to the Voice of Firestone, Monday evenings over the entire NBC coast-to-coast network

COMPANY 410 NO. MICHIGAN AVE.
CHICAGO 12, ILLINOIS

Detroit Cleveland St. Paul Council Bluffs Salt Lake City Tacoma

RAILROADS FIND THIS



WHAT IS THE J-M STANDARDIZED PACKINGS PLAN?

Experienced Johns-Manville service engineers make a thorough check of every piece of machinery on a railroad's entire system. The correct style and size of packing is determined for every packing need. In a packing survey like the one above each requirement of packing is listed and is given a number.

Copies of this manual go to every shop, power plant and storehouse. And, when a packing is needed, it is ordered merely by number instead of by long, complicated description. This greatly reduces the possibilities of error and saves time and material.

For over 20 years railroads have been saving time and money with this J-M Plan. It can do the same for you. Why not investigate further?

The Johns-Manville Offers You Many

For your stores . . . When all the varied packing needs of your entire organization are tabulated and catalogued into one manual by J-M, the operation becomes simple as A-B-C.

Less stocks need be carried. There's no waste. Duplication of many materials is ended. Requisitions become quick, simple to fill. No measuring or guesswork on what's really wanted. The shop gets the *right* product for the right service.

The chance of errors in typing and bookkeeping, in filling requisitions or in ordering, is all but eliminated. Your stores' personnel will get its job done faster, too.

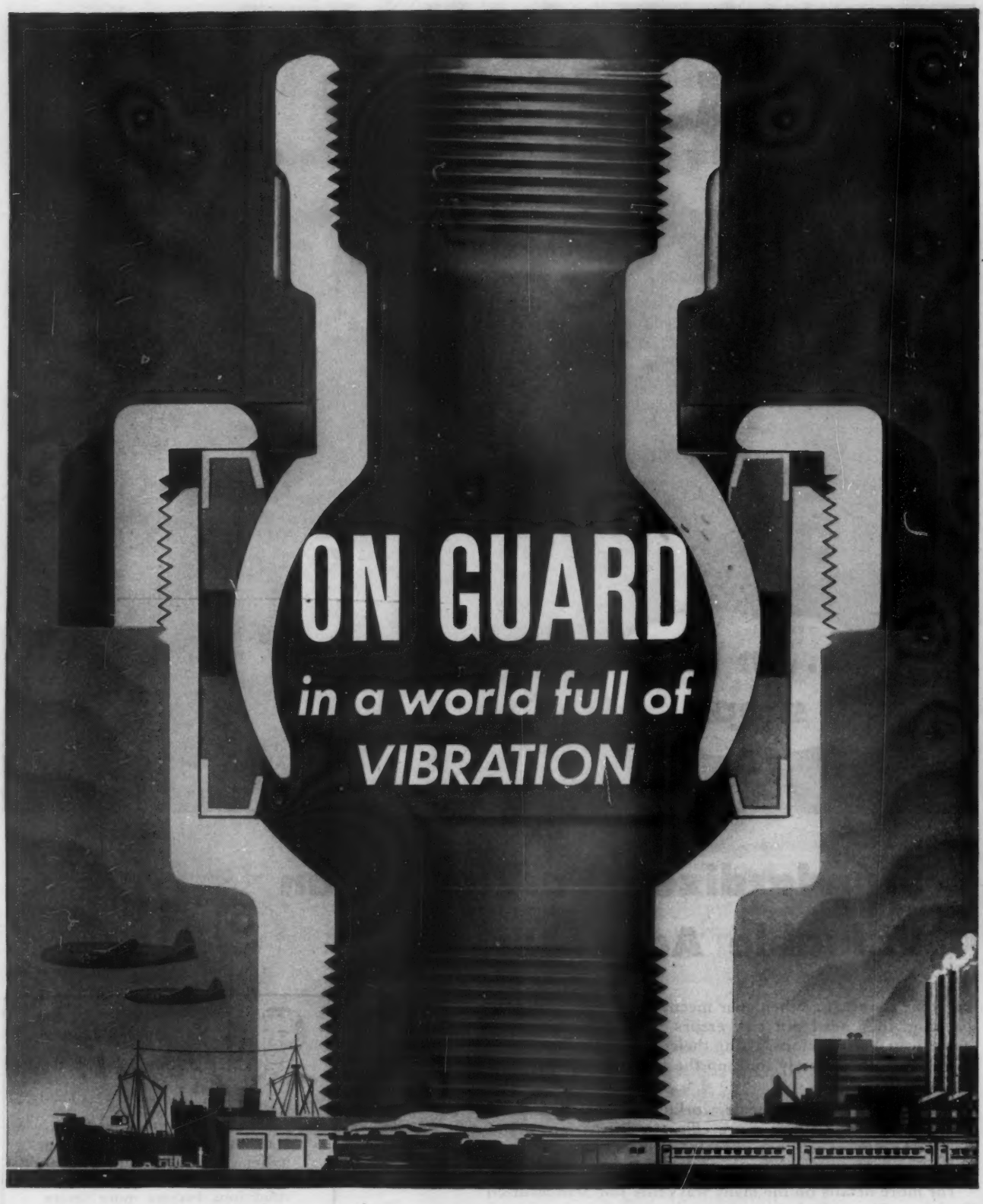
And, when your stores need replacements from J-M, you avoid writing long descriptions. Just specify item numbers and quantities.

JOHNS-MANVILLE JM PRODUCTS

JOHNS-

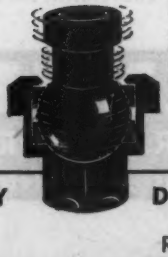
86 YEARS OF SERVICE

Insulation · Friction Materials



BARCO FLEXIBLE JOINTS

BARCO MANUFACTURING CO., NOT INC.
1800 WINNEMAC AVE., CHICAGO 40, ILL.
In Canada: THE HOLDEN CO., LTD., MONTREAL, CANADA



Not just a swivel joint ...but a combination of a swivel and ball joint with rotary motion and responsive movement through every angle.

"MOVE IN EVERY DIRECTION"

WEATHER TIGHT DOORS

. . . insured by the wedging action of the handle

SUPERIOR CAR DOOR

- RIGID CONSTRUCTION
- LIGHT WEIGHT
- LONG LIFE
- WEATHER PROOF
- FREE ROLLING
- NO SLAMMING

SUPERIOR CAR DOOR CO.

McCORMICK BUILDING, CHICAGO

...urs Rec'd and Contents Noted..."

Of late we've been noticing quite a bit of modern "consumer research" by our friends in the railroad industry to determine just what standards of comfort Americans will want in post-war passenger equipment.

Needless to say, we appreciate the significance of these shrewd steps toward retaining a high percentage of today's passenger traffic. And we are busily engaged in streamlining our future production of *Chase Velmo Mohair Upholstery* and *Sanvale Draperies* to complement the other appointments of your new equipment.

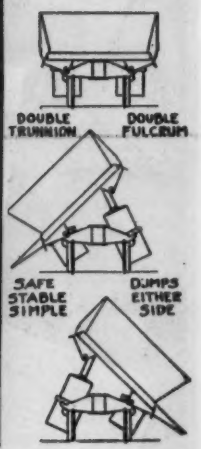
We welcome the opportunity to work with you on fabric designs for new cars... and solicit your inquiries on upholstery replacements to keep present equipment refurbished until those new cars can be delivered.

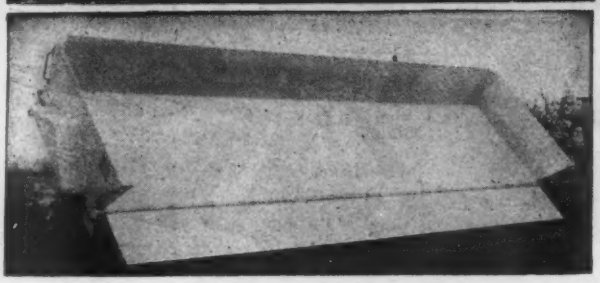
CHASE

VELMO MOHAIR UPHOLSTERY
SANVALE DRAPERIES • COATED FABRICS

L. C. CHASE & COMPANY • 295 Fifth Avenue, New York 16, N. Y.

Sales Division of Sanford Mills **• Offices: BOSTON, DETROIT, CHICAGO, LOS ANGELES**





Steep dumping angle and smooth floor assures clean dumping of any size or class of material

DIFFERENTIAL
AIR DUMP CARS

SHOW IMPORTANT TIME AND COST SAVING ADVANTAGES

- Automatic side dumping
- Dumps far away from track
- Builds dump with minimum labor
- Steep dumping angle—smooth floor
- Dumps to either side quickly by air
- Built for long life and low maintenance
- Built to stand severe loading conditions
- Quick and sure dumping by powerful air cylinders
- Clean dumping of any size or class of material
- Down-folding side doors—clear discharge opening
- Simple, rugged construction—no locking mechanism

DIFFERENTIAL RAIL CARS are powered with four gasoline engines that operate very quietly and deliver 500 hp to eight wheels. AXLESS Trucks permit independent rotation of wheels which eliminates slippage and noise on curves. Extra long spring action and true rolling of AXLESS Trucks produce a very comfortable ride.

DIFFERENTIAL STEEL CAR COMPANY

FINDLAY, OHIO, U. S. A.

Builders of Haulage Equipment Since 1915

AIR DUMP CARS · MINE CARS · MINE LOCOMOTIVES · ROCK LARRIES · DUMPING DEVICES
BURDEN-BEARING LOCOMOTIVES · STOCKPILING CARS · COMPLETE HAULAGE SYSTEMS

What MAKES A LUXURY TRAIN?

ONLY a decor that creates a sense of well being can long attract and hold extra patronage.

The materials for compounding such a decor must suggest cleanliness, efficiency, permanence, comfort, suitability, beauty and good taste.

All of these attributes are conspicuously exemplified and permanently inherent in Formica laminated plastic as used for table tops, bar tops and decorative paneling in many of the latest streamlined trains.

Formica table and counter tops are not damaged by hot soup, fruit acids, lighted cigarettes or alcohol. They cannot be dented or chipped by dishes. They can be cleaned by the whisk of a damp cloth.

Formica paneling cannot crack or check, it never has to be refinished. Formica laminated plastic comes in all desirable colors, shades and harmonious combinations and patterns. Actual woods are incorporated in the laminations and protected by a covering of clear plastic which insures fadeless beauty.

"The Formica Story" is a moving picture in color showing the qualities of Formica, how it is used and how it is made. Available for meetings of business groups.

THE FORMICA INSULATION COMPANY
4641 Spring Grove Avenue Cincinnati 32, Ohio

APEXIOR REG. U.S. PAT. OFF. SURFACING MATERIALS FOR INTERIORS OF LOCOMOTIVE BOILERS AND TENDER TANKS...

Fig. 1 — One half of this piece of standard locomotive flue has been surfaced with APEXIOR NUMBER 1.

APEXIOR NUMBER 1 is a brush-applied surfacing material for the water side of locomotive boiler flues, shells, firebox sheets and staybolts. The coating of APEXIOR protects against corrosion by filling and covering the surface of the metal to an average thickness of 0.0025 inch. Water contact with the metal and penetration of the metal structure is prevented. The character of the APEXIORIZED surface is such that dirt and scale do not bond as tightly as to bare steel. Boiler washing is more effective. Long operation of APEXIOR on heating surfaces at all pressures and ratings and in all types of boiler equipment has indicated no effect to retard heat transmission.

APEXIOR NUMBER 1 is not a substitute for feed-water preparation or chemical treatment. It supplies protection for metal in service under boiler water and steam temperatures and pressures, supplementing the work of the chemist and water service engineer by increasing the durability and raising the service quality of the boiler metal. It is the simplest and most effective kind of Mechanical cooperation with the Water Service Department.

It has been demonstrated on a number of railroads that APEXIOR surfaced metal means longer life of flue and sheet steel under boiler water, lower average maintenance costs and easier and more effective boiler washing.

Fig. 1 shows a piece of standard flue partially surfaced with APEXIOR or APEXIORIZED. The entire tube was passed through a sandblasting machine before the application. Sand-blast cleaning is not essential. It is, however, considered to be the most satisfactory cleaning method. Any steel surface that is dry and free from loose rust, scale, dirt or oil will bond properly with APEXIOR for longer and better service.

Badly pitted flues which were on the road to the scrap pile have been reclaimed, surfaced with APEXIOR and placed in active equipment.

Fig. 2 shows an area of APEXIOR surfaced boiler plate and rivet heads after two years' service at 215 pounds operating pressure. Observe that no metal is exposed. The protective surfacing has remained intact.

Service experience of five years on locomotive shells is now available. It has been fully demonstrated on several important Systems that APEXIOR is effective in railroad locomotive boilers to retard or check corrosion and pitting, and that any subsequent use of chipping hammers, air scaling tools or sandblast cleaning of shells after flues are removed, may be dispensed with. APEXIOR surfacing of staybolts and of other water contact areas subjected to the hazard of embrittlement or accelerated stress corrosion, may have interesting possibilities. It is the kind of modernization that assists any steam power unit to maintain its position against competitive types of power equipment.

APEXIOR NUMBER 3 is a protective surfacing material for the interior of general tank and tender equipment. It is brush-applied cold and dries a smooth, shiny jet black.

APEXIOR surfacing materials are well-known and have a wide distribution in stationary utility, railroad and general industrial power plants throughout the country, and in the marine field. Shipped ready to apply after mixing in the container.

APEXIOR REG. U.S. PAT. OFF.

Fig. 2 — APEXIOR surfaced boiler plate and rivet heads after two years service under 215 pounds boiler operating pressure. Note brush marks and thickness of film over plate markings.

THE DAMPNEY COMPANY OF AMERICA

HYDE PARK · BOSTON · MASSACHUSETTS

ATLANTA NEW YORK PHILADELPHIA CHICAGO DETROIT

WHERE THE DEMAND FOR AIR IS CONTINUOUS...

WHEREVER the demand for air is continuous, a Gardner-Denver "HA" Two-stage Horizontal Compressor can best answer the need. For the "HA" has been engineered for continuous heavy-duty service . . . for dependable operation that stands up under tough emergency calls.

Horsepower requirements are unusually low with the "HA," and they are noted for their ability to establish remarkable maintenance records.

The sustained output of these compressors is due to better design and advanced manufacturing methods.

NOTE THESE "EXTRA" ADVANTAGES . . .

1 **5-step capacity control (recycling) employing Clearance Pocket Control Valve of semi-balanced piston construction. Doubly protected from air leakage by both snap rings and beveled seat—no diaphragms. Since movement of parts is infrequent, due to recycling, life of valves is almost unlimited.**

OTHER "HA" FEATURES

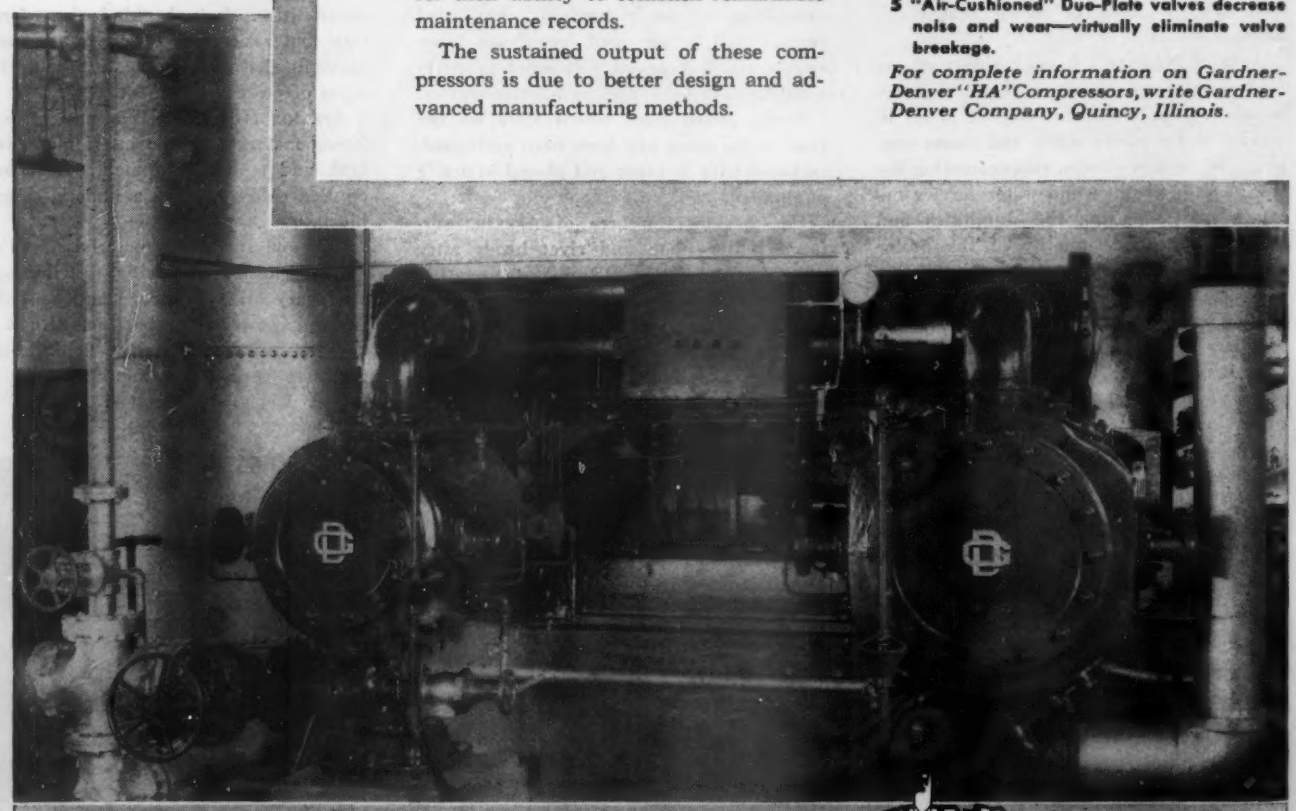
2 **Timken roller main bearings for the life of the machine . . . eliminate shaft wear.**

3 **Unrestricted air passages and large valve areas assure high overall efficiency.**

4 **Larger water jackets assure cooler running compressor.**

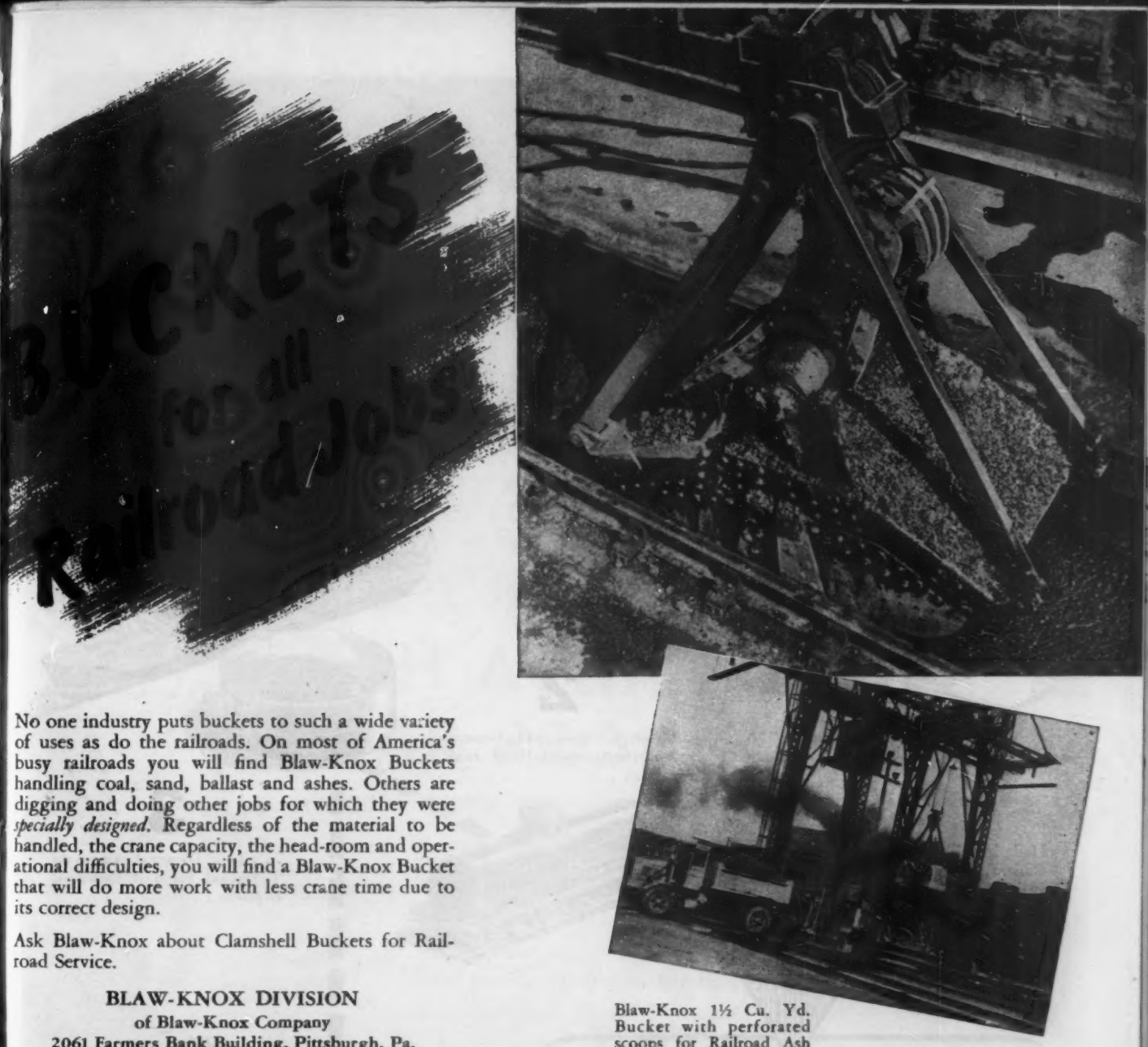
5 **"Air-Cushioned" Duo-Plate valves decrease noise and wear—virtually eliminate valve breakage.**

For complete information on Gardner-Denver "HA" Compressors, write Gardner-Denver Company, Quincy, Illinois.



GARDNER-DENVER

Since 1859



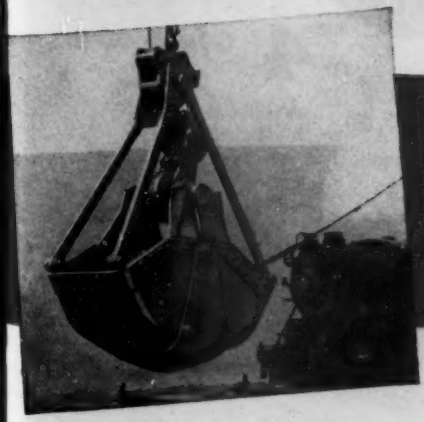
No one industry puts buckets to such a wide variety of uses as do the railroads. On most of America's busy railroads you will find Blaw-Knox Buckets handling coal, sand, ballast and ashes. Others are digging and doing other jobs for which they were *specially designed.* Regardless of the material to be handled, the crane capacity, the head-room and operational difficulties, you will find a Blaw-Knox Bucket that will do more work with less crane time due to its correct design.

Ask Blaw-Knox about Clamshell Buckets for Railroad Service.

BLAW-KNOX DIVISION
of Blaw-Knox Company
2061 Farmers Bank Building, Pittsburgh, Pa.
New York Chicago Philadelphia Birmingham Washington
Representatives in Principal Cities

Blaw-Knox 1½ Cu. Yd. Bucket with perforated scoops for Railroad Ash Pit Service.

BLAW-KNOX *Clamshell* BUCKETS

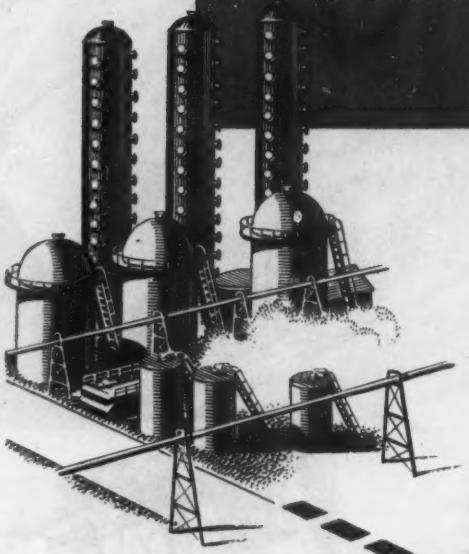


Blaw-Knox 1¼ Cu. Yd. Round Nosed Bucket used for ballast cleaning.

Blaw-Knox Eight-ton Coal Bucket. Actual Operating capacity 4400 tons in eight hours. River-rail transfer service.

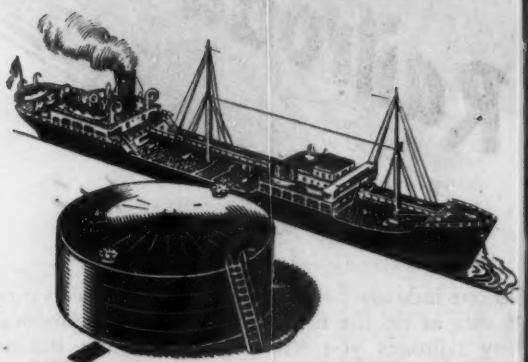
Blaw-Knox Light Weight Alloy Steel Bucket for fast rehandling of coal.

The Route of a Gallon of Gasoline



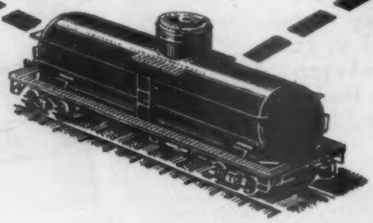
1

Made in a modern plant using General American pressure vessels . . .



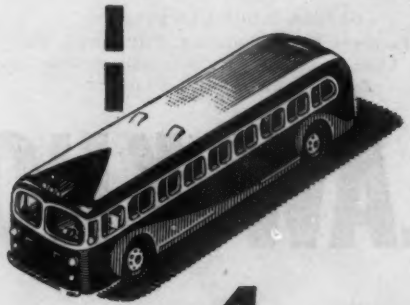
2

Gasoline is speeded in General American specialized tank cars . . .



3

. . . to a General American Terminal for fast shipment overseas . .



4

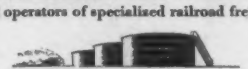
. . . or used by a General American Aerocoach—light, strong, economical on gasoline.

GATX GENERAL AMERICAN

GENERAL AMERICAN TRANSPORTATION CORPORATION

Chicago

Builders and operators of specialized railroad freight cars



Bulk liquid storage terminals

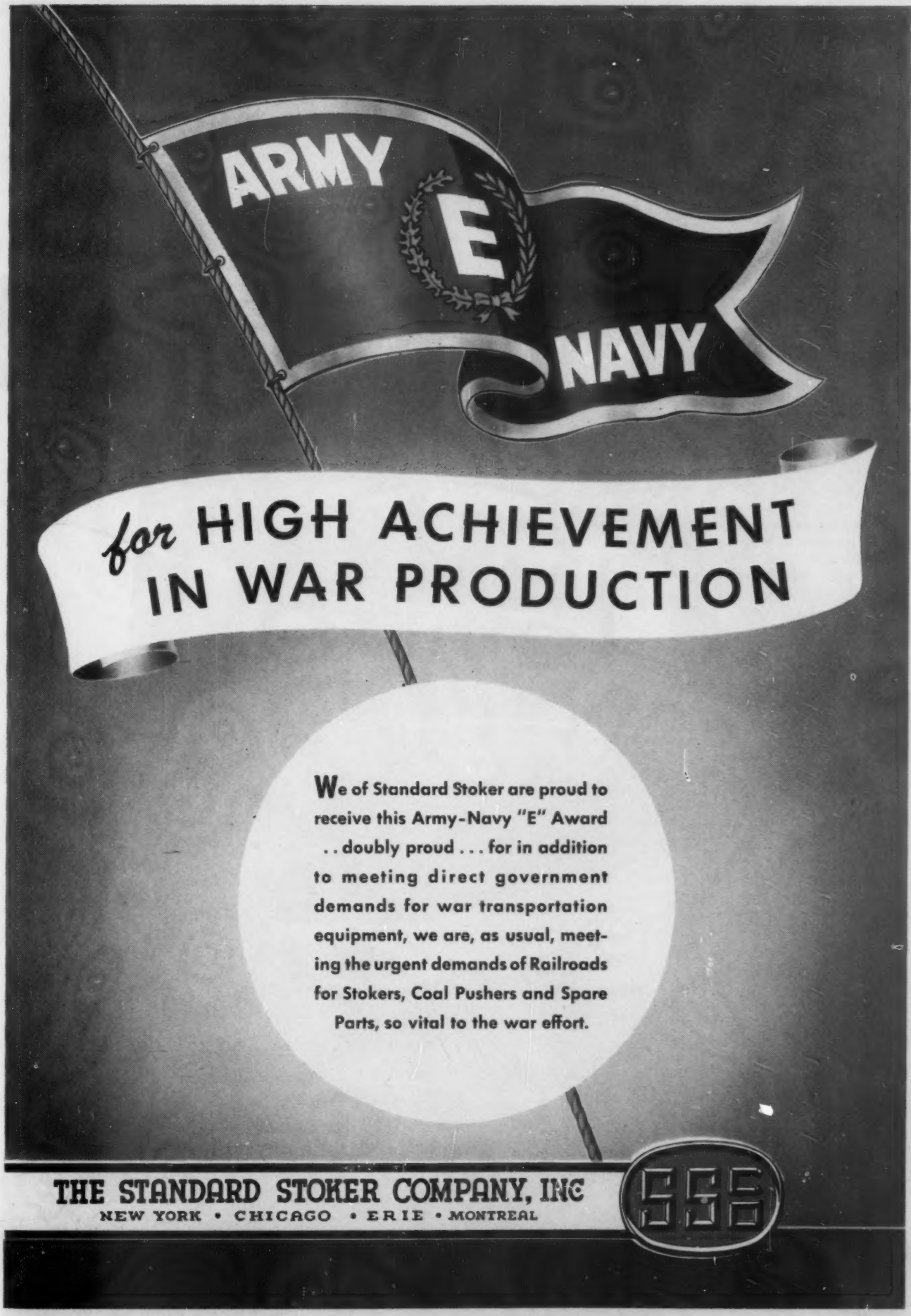
Pressure vessels and other welded equipment

Aerocoach motor coaches

Process equipment of all kinds

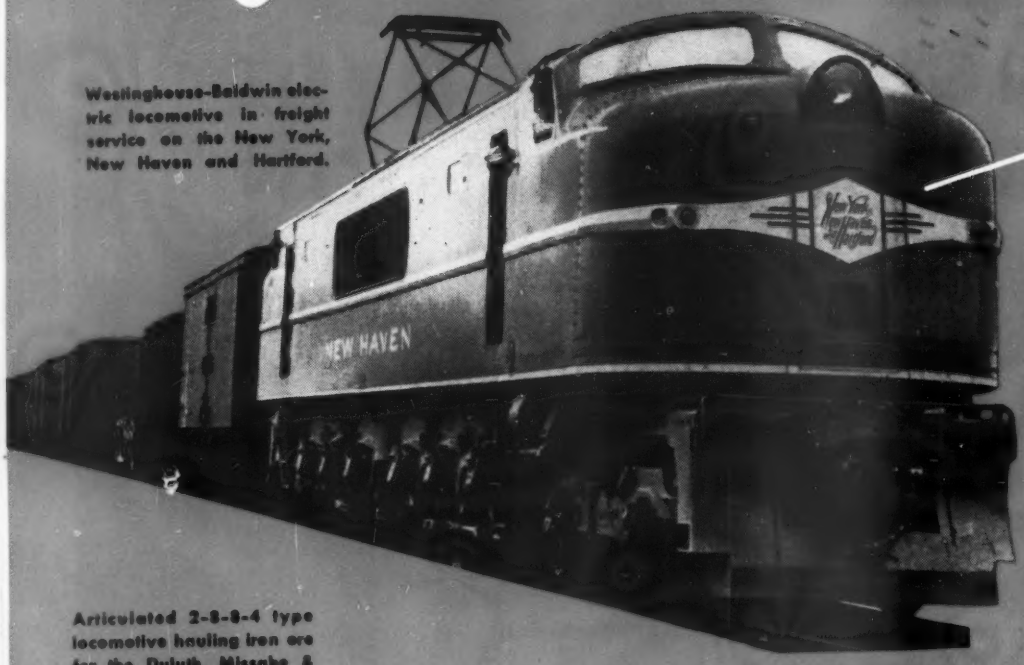
Precooling service for fruits and vegetables

One of a series of advertisements designed to show General American's contribution to everyday living and our part in the efficiency of American Industry during war and peace.

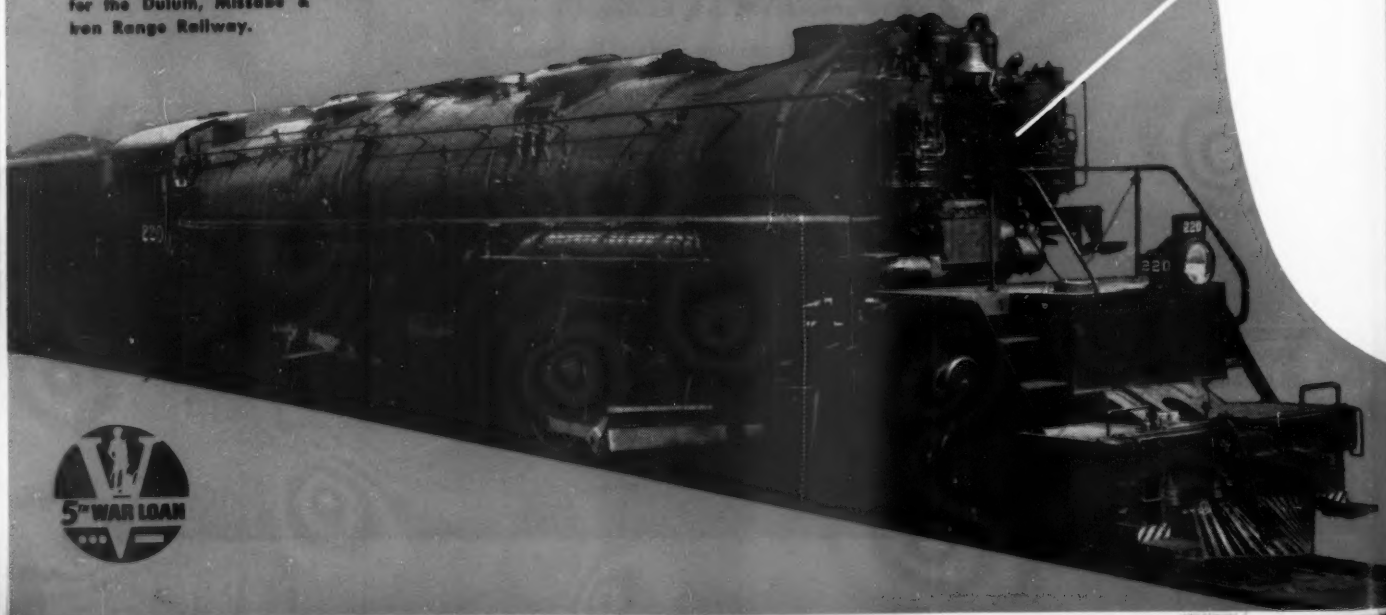

ARMY
E
NAVY
for HIGH ACHIEVEMENT IN WAR PRODUCTION
We of Standard Stoker are proud to receive this Army-Navy "E" Award . . doubly proud . . . for in addition to meeting direct government demands for war transportation equipment, we are, as usual, meeting the urgent demands of Railroads for Stokers, Coal Pushers and Spare Parts, so vital to the war effort.
THE STANDARD STOKER COMPANY, INC
NEW YORK • CHICAGO • ERIE • MONTREAL
555

STEAM, DIESEL-ELECTRIC AND ELECTRIC LOCOMOTIVES

HAULING THE SUPPLIES T



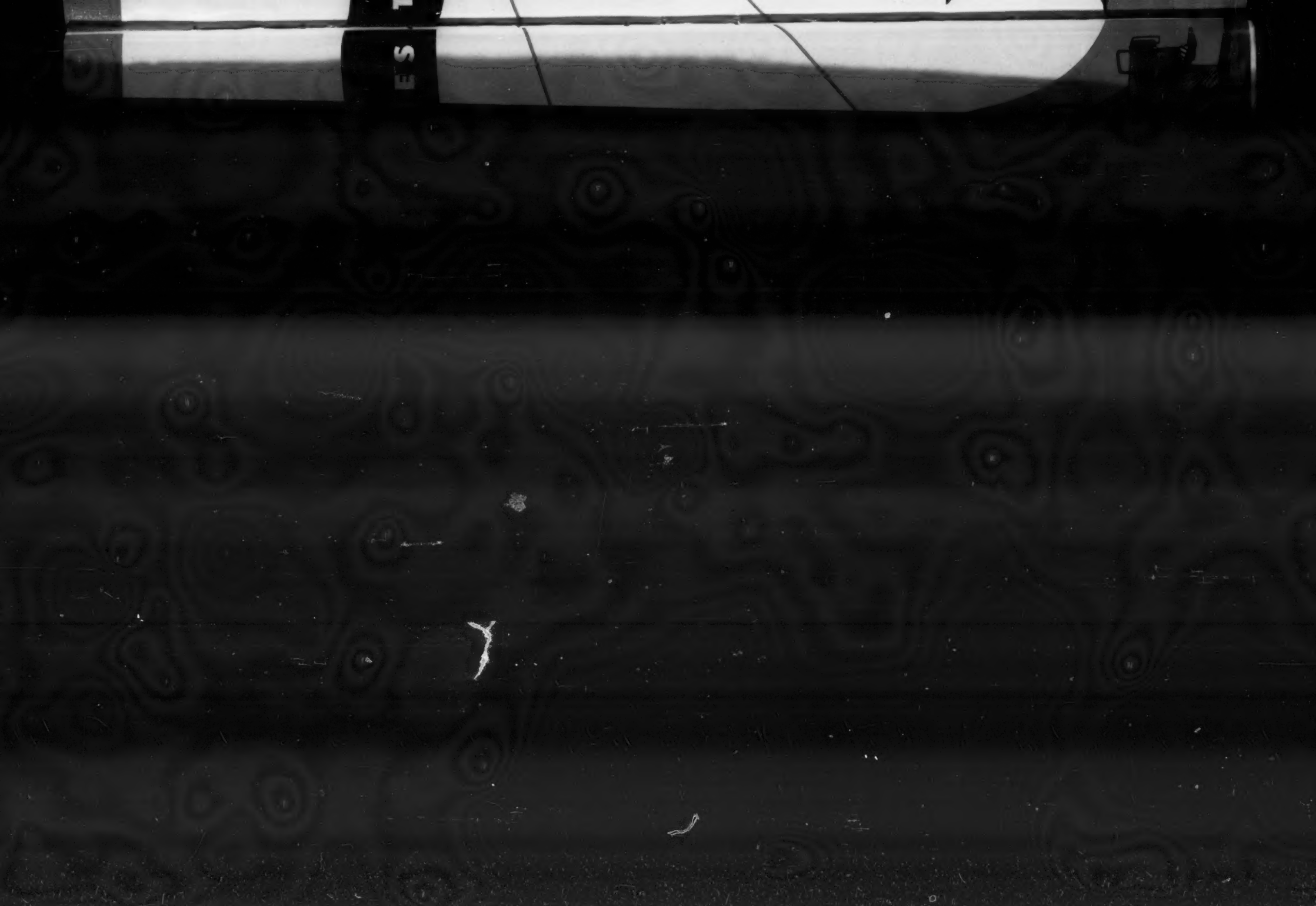
Westinghouse-Baldwin electric locomotive in freight service on the New York, New Haven and Hartford.



Articulated 2-8-8-4 type locomotive hauling iron ore for the Duluth, Missabe & Iron Range Railway.

5TH WAR LOAN


S TH



Baldwin-Westinghouse 1000 hp. diesel-electric locomotive serving the Reading.

S THAT WILL SPEED VICTORY

Without the raw materials, finished products and millions of troops transported by the railroads since 1941, there could be no European invasion—no final victory.

Freight carried by the American railroads has shown a steady increase from the 475 billion revenue ton-miles carried in 1941, to the all-time high of 727 billion ton-miles in 1943.

Baldwin locomotives of all types are helping the railroads with this task—the greatest transportation job in history.

The Baldwin Locomotive Works, Locomotive and Ordnance Division, Philadelphia, Pa., U. S. A. Offices: Philadelphia, New York, Chicago, Washington, Boston, Cleveland, St. Louis, San Francisco, Houston.

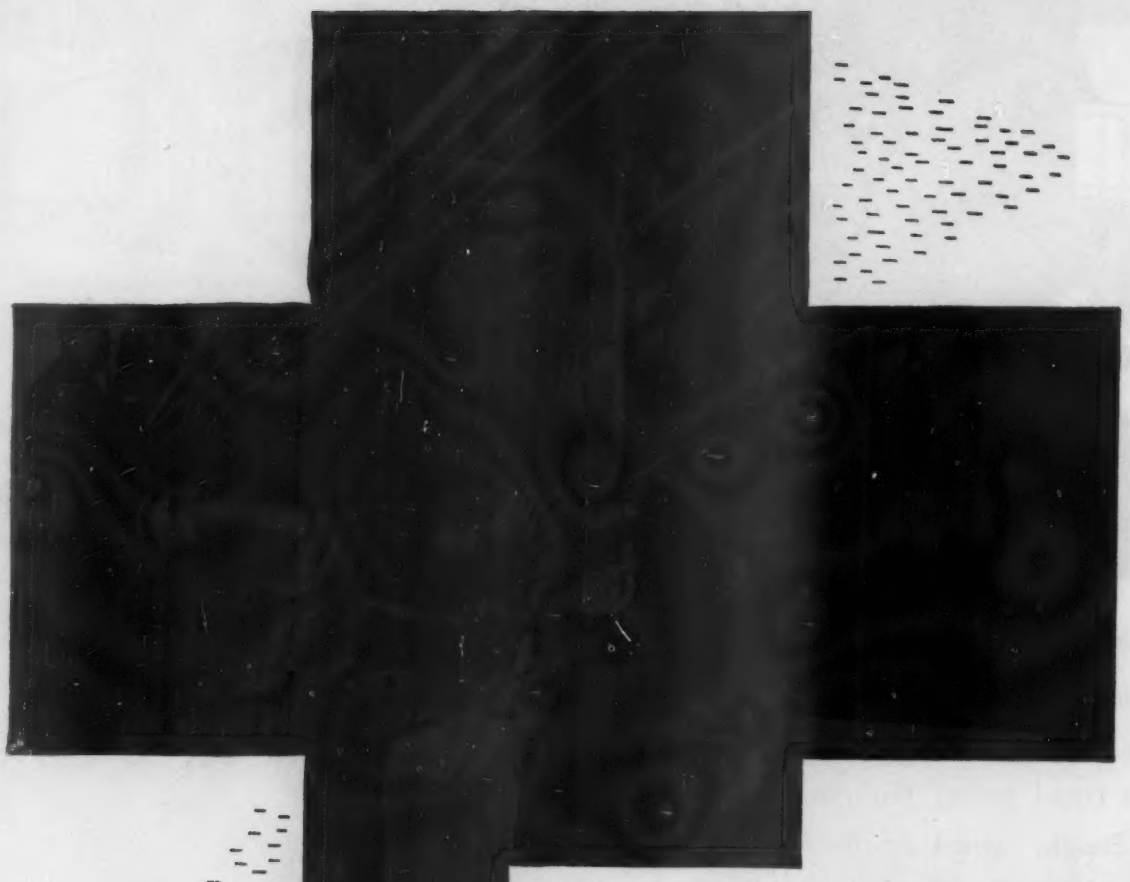
BLW THE BALDWIN GROUP

BALDWIN

LOCOMOTIVES

BALDWIN PRODUCTS for the railroads: Steam, Diesel-electric and electric locomotives, Diesel engines, hydraulic presses, special railroad shop equipment, testing machines and instruments, steel tires and rolled steel wheels, crane wheels, connecting rods and other steel forgings, steel castings, springs, metal plate fabrication, boilers, non-ferrous castings, bending rolls, plate planers, dynamometer cars.

BALDWIN SERVES THE NATION WHICH THE RAILROADS HELPED TO BUILD



HOW TO KEEP CARS AND ENGINES OUT OF THE "HOSPITAL"

Railroad "Hospitals" are less often frequented by locomotives and cars if they are equipped with N-B-M Bearings and Bronze Castings. They are produced by specialists who have made a life-study of the cause and effect of failures.

N-B-M cast-to-size parts conform strictly to specified dimensions and tolerances. They are of uniform quality and condition, free from blowholes, porosity, shrinkage defects, cracks, etc.

Give your cars and engines a long and "healthy" life by prescribing

N·B·M

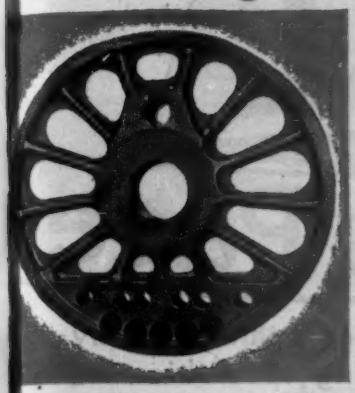
CAR JOURNAL BEARINGS AND ENGINE CASTINGS

NBM

NATIONAL BEARING METALS CORPORATION

AMERICAN Brake Shoe COMPANY

Grabbing the Mail Bag Gave OLD 110 a Shock!



In 1874, Mr. Watkeys of Syracuse built the New York Central a locomotive that really had *speed.* On its mail run between Syracuse and Buffalo it was clocked at 65 to 75 miles an hour! All her big 73 inch drivers lacked was—

Union WEB Spoke Driving Wheel Centers

- ★ Cruciform section spokes for great additional strength.
- ★ Reinforced rim support to eliminate flat spots, out of roundness, etc.
- ★ Correct distribution of metal for better balancing of smaller diameter wheels.
- ★ Wheels easily inspected before and after installation.
- ★ Troubles due to shrinkage eliminated by simplicity of design.
- ★ Can be made to any material specification.

NO. 4 OF A SERIES ILLUSTRATING THE EVOLUTION OF AMERICAN LOCOMOTIVES

THE "HERALD" TRAIN—1874

The first "fast mail" of the New York Central and Lake Shore railroads was inaugurated Sept. 16, 1874, making the run from New York to Buffalo in 11 hrs. 15 min. hauling four mail cars and a "palace" car. Harper's Weekly reports—

"The process of catching the mail-bags from the cranes set up on the side of the track was watched with much interest. When the mail-sack was unusually heavy, a perceptible shock was felt as it was hooked onto the arm of the iron catcher."

From "IRON HORSES"... W. W. NORTON & CO., Inc.

ARMY ★ E ★ NAVY

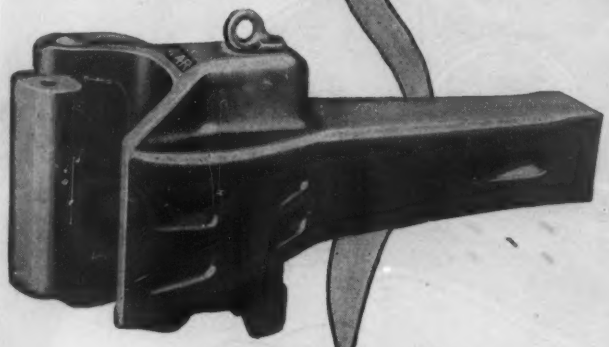
UNION STEEL CASTINGS

DIVISION OF
BLAW-KNOX CO.
PITTSBURGH, PA.

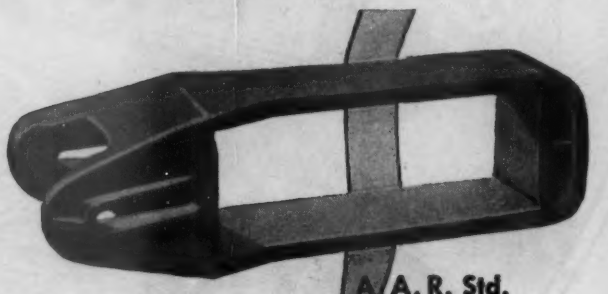
NATIONAL Keeps Pace

National B-1 Truck with Dual Control

For nearly 70 years this company has been making specialties for railroad equipment. By laboratory research, and road service tests in cooperation with the railroads, National has developed and improved devices to meet the demands of increased speed, greater power and heavier trains of modern railroad operation.

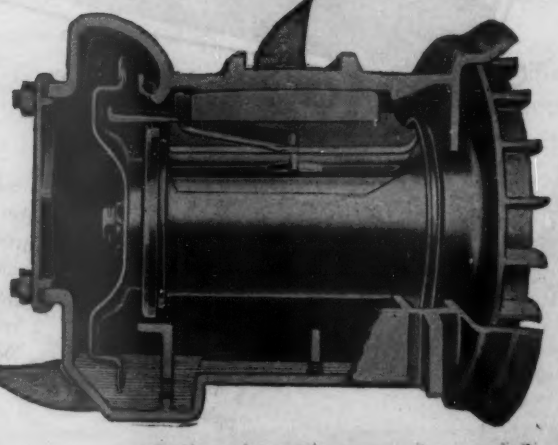


A. A. R. Std. E. Coupler



A. A. R. Std.
Vertical Plane
Horizontal Key Yoke

National Journal Box with Deflecting Fan and Flexo No. 2 Lid



National Isothermos Journal Box

NATIONAL MALLEABLE AND S

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco

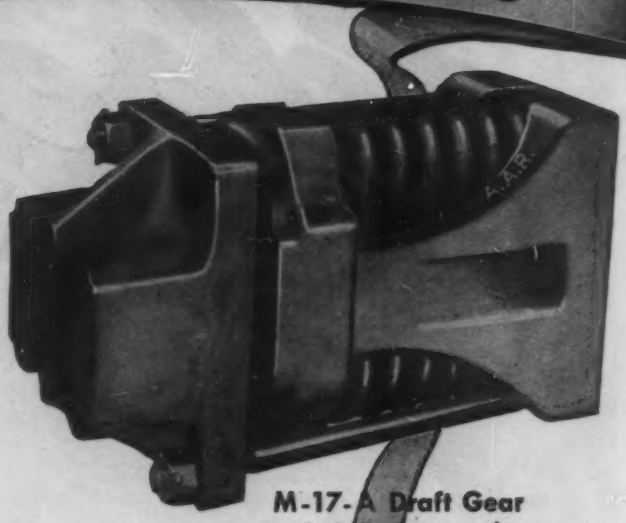
General Offices: Cleveland, Ohio

RAILROAD PROGRESS

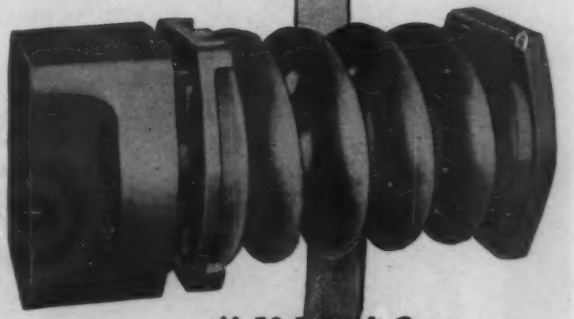
With

Today the National line of railroad devices includes:

A. A. R. STANDARD E COUPLERS
A. A. R. TIGHT LOCK COUPLERS
ENGINE COUPLER POCKETS
A. A. R. CERTIFIED DRAFT GEARS
A. A. R. DRAFT YOKES
A. A. R. TYPE JOURNAL BOXES AND LIDS
ISOTHERMOS JOURNAL BOXES
TRUCKS, SIDE FRAMES, BOLSTERS, ETC.

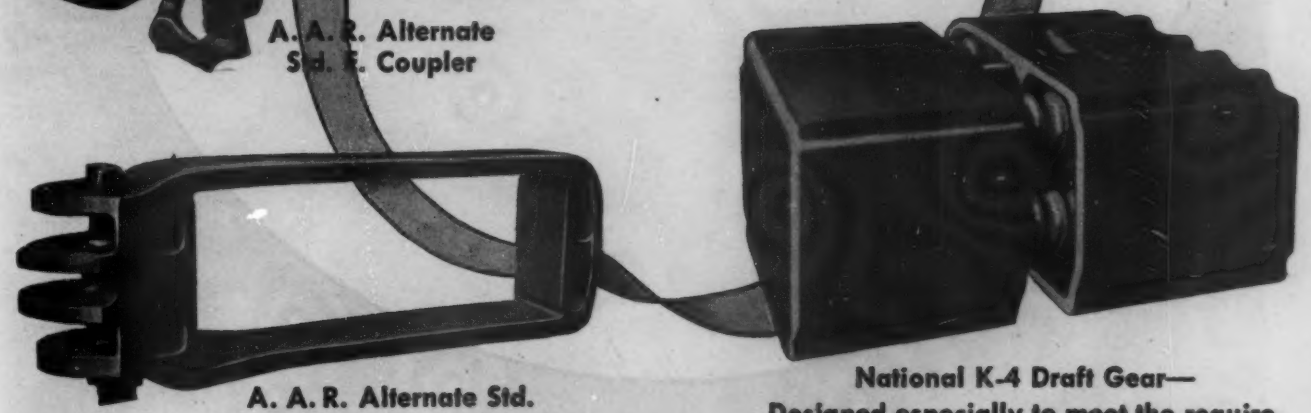


M-17-A Draft Gear
A. A. R. Approved



M-50-[illegible] Draft Gear
A. A. [illegible] Approved

A. A. R. Alternate
Std. [illegible] Coupler



A. A. R. Alternate Std.
Vertical Plane Swivel Yoke

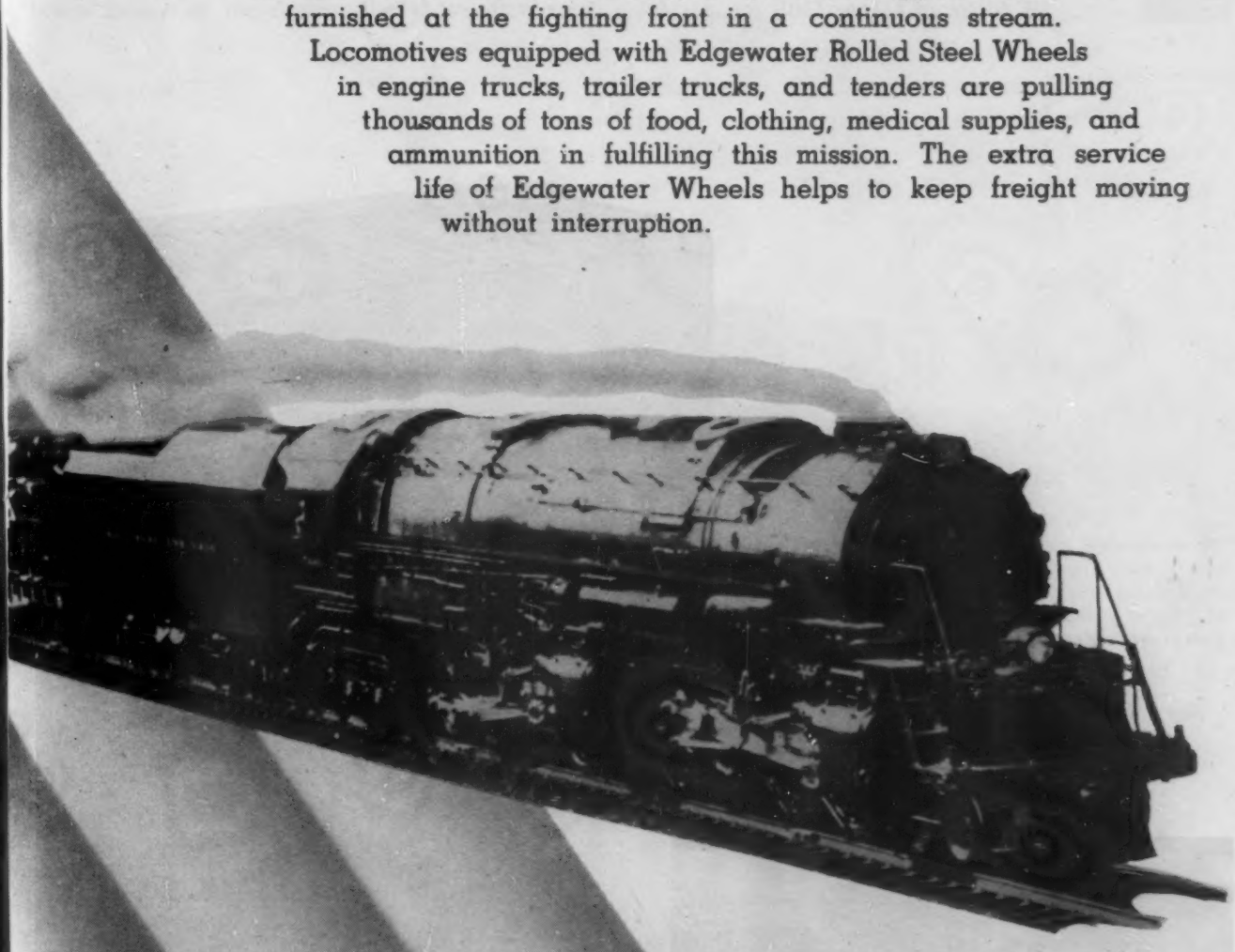
National K-4 Draft Gear—
Designed especially to meet the requirements of high speed passenger service.

D STEEL CASTINGS COMPANY

Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.
General Offices: Cleveland, Ohio

WHEELS OF LIBERATION

Invasion of continents and the liberation of subject peoples can be carried out successfully only when supplies are furnished at the fighting front in a continuous stream. Locomotives equipped with Edgewater Rolled Steel Wheels in engine trucks, trailer trucks, and tenders are pulling thousands of tons of food, clothing, medical supplies, and ammunition in fulfilling this mission. The extra service life of Edgewater Wheels helps to keep freight moving without interruption.



Atlanta, Ga. Baltimore, Md. Boston, Mass. Chicago, Ill. Cleveland, O. Kansas City, Mo. Louisville, Ky. New York, N.Y. Philadelphia, Pa. St. Louis, Mo. St. Paul, Minn. San Francisco, Cal Seattle, Wash. Tulsa, Okla. Washington, D.C.

REYNOLDS ALUMINUM . . .

for the Lighter, Stronger Cars that are Needed Now

One of the many huge rolling mills which turn out Reynolds plate and sheet aluminum. The Reynolds plants are equipped to produce large tonnages of this tough weight-saving metal for post-war needs.

CAR DESIGNERS have been aluminum conscious for a long time. Modern streamlined passenger trains proved that weight saving is only one of the reasons why aluminum is the logical, economical material to use wherever possible in new car construction. The lowered maintenance cost in itself has proved to be a powerful argument in favor of corrosion-resistant aluminum.

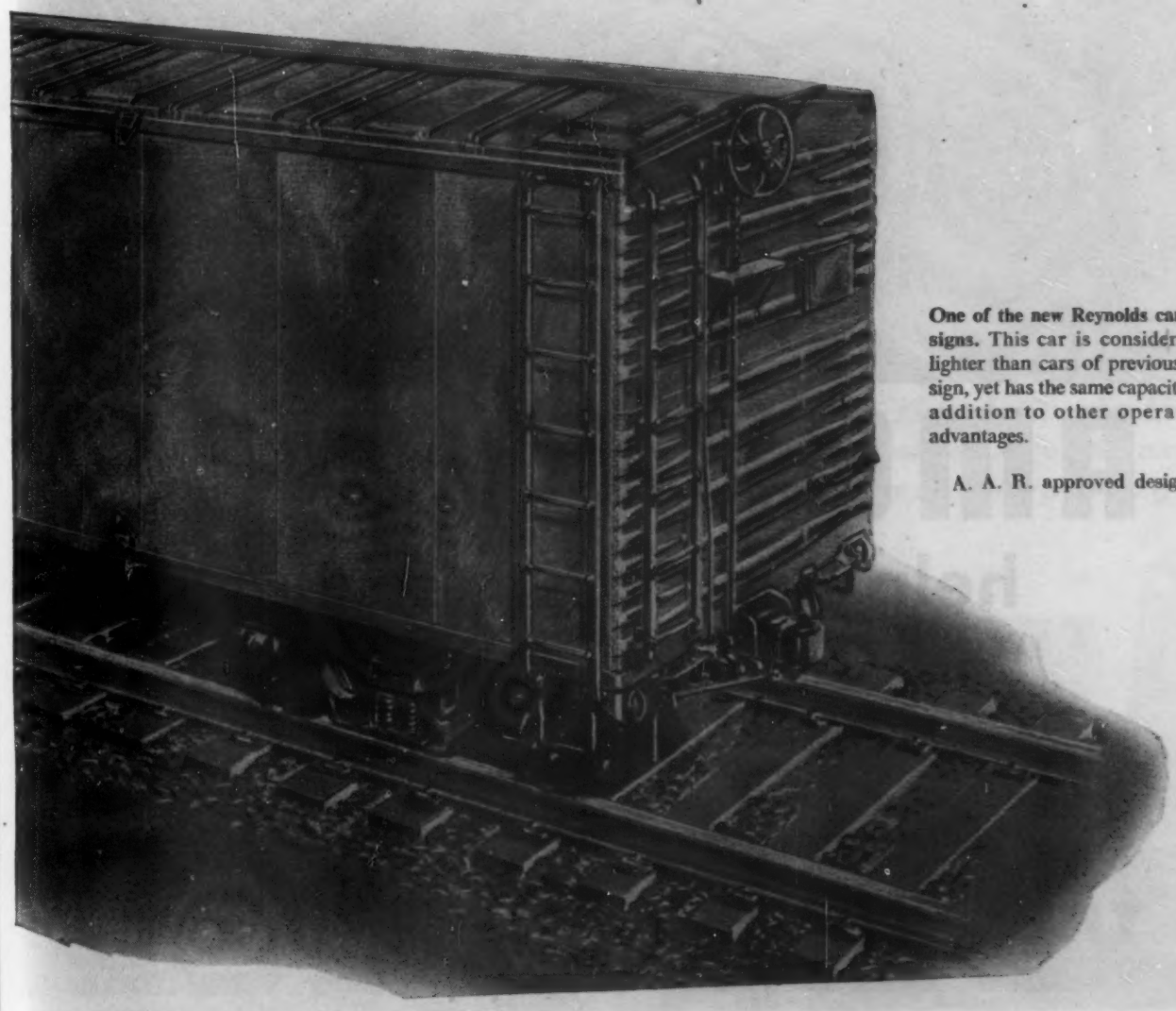
There is even more reason to use aluminum in freight cars than in passenger cars. Every pound eliminated from freight rolling stock is a pound of non-paying weight that saves power and switching time . . . cuts operating costs.

Reynolds engineers have devoted much time during the past several years to studying the best applications of aluminum in car construction. The car shown below is one of the designs they have developed.

These Reynolds engineers are experienced, practical railroad men, fully familiar with the unique needs of railroads . . . familiar with railroad shop practice as well as traffic requirements. Working with Reynolds metallurgists, they have developed a number of high-strength aluminum alloys that solve many problems formerly confronting aluminum car fabricators.

* * *

Reynolds Railway Supply Division is now ready to talk with railroad operating men regarding the use of these new aluminum alloys in freight and passenger cars of every type. A number of new car designs have been completed offering impressive savings in weight with equal or greater strength. General arrangement blueprints are available now for interested executives. Write to Reynolds Metals Co., Railway Supply Division, 310 South Michigan Boulevard, Chicago 4, Ill.



One of the new Reynolds car designs. This car is considerably lighter than cars of previous design, yet has the same capacity, in addition to other operating advantages.

A. A. R. approved design

STANDARD ON MOST ROADS

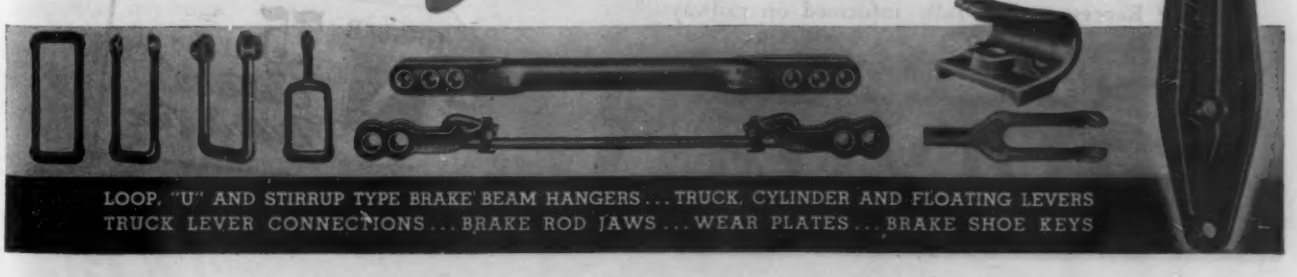
When your freight car repair program is under consideration you can be certain that Schaefer Service will meet your delivery requirements.

Don't worry about the added stresses on brake gear appliances caused by *connection through the bolster* construction . . . simply include in your specifications Schaefer Truck Lever Connections, Truck and Body Levers and Loop Hangers.

Schaefer Light Weight Design Insures More Than Car Life

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.



LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS . . . TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS . . . BRAKE ROD JAWS . . . WEAR PLATES . . . BRAKE SHOE KEYS

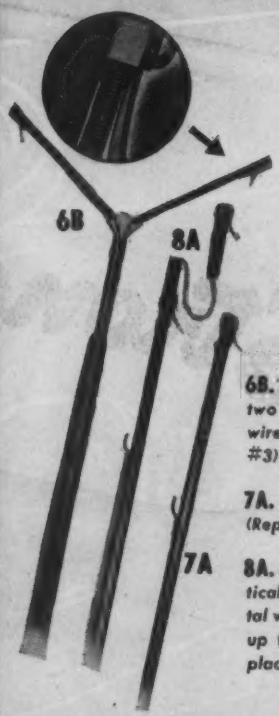
Improved WESTERN ELECTRIC EQUIPMENT

via GraybaR

Railroads whose communication and dispatching facilities are strained to the breaking point will now find it easier to secure these improved Western Electric items. They will reach you exclusively through Graybar.

NEW, BETTER *Line Poles*

A new connector jaw assures clean contact without wire damage. Poles are stronger. An improved external spring latch holds sections firmly joined. The yoke is stronger. New straps are provided for packing the unjointed poles. Wire, now 50 instead of 100 ft. long, is ordered separately.

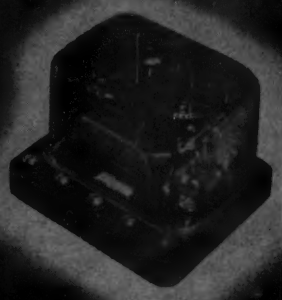


6B. *"Y" type, for two horizontal wires (Replaces #3)*

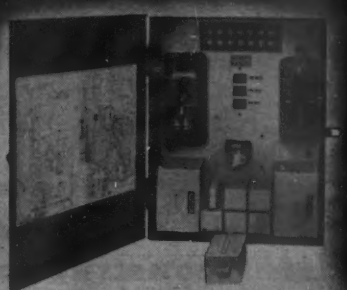
7A. *Single wire (Replaces #4)*

8A. *For two vertical or horizontal wires, spaced up to 5½". (Replaces #5)*

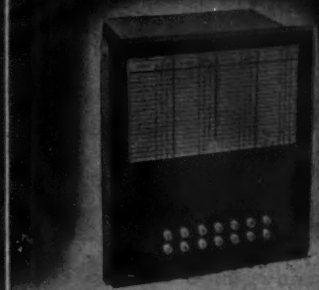
"60" TYPE SELECTORS



SELECTOR APPARATUS CASES



SELECTOR KEYS



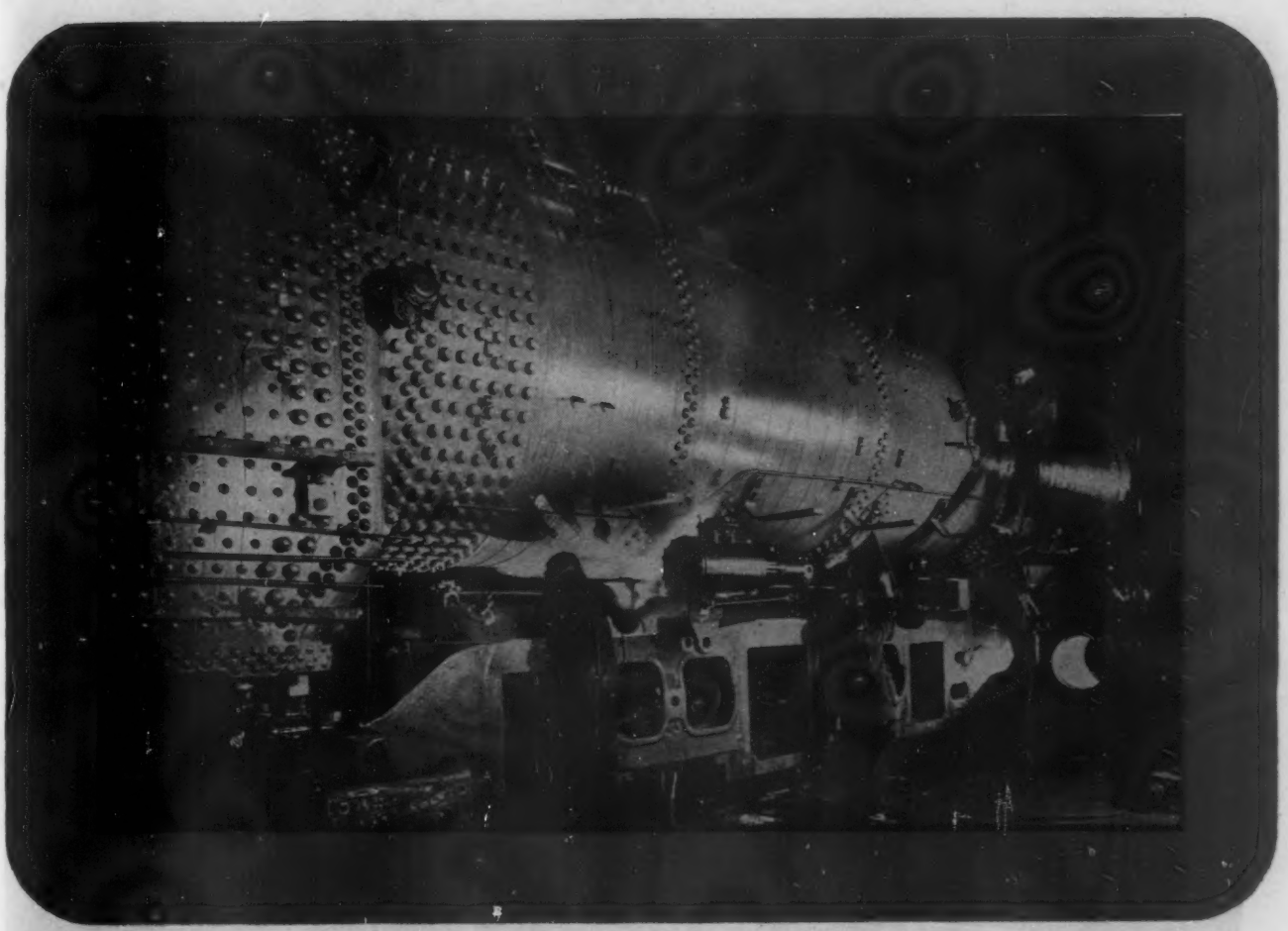
There is a* GRAYBAR WAREHOUSE *near you. Graybar's nation-wide network of over 80 warehouses helps assure faster mobilization service on special equipment, and immediate delivery on many standard electrical items. You will find Graybar Representatives fully informed on railway dispatching and communications systems and their needs. A Graybar Man in your area is ready to make your electrical supply problems his personal responsibility. Why not take advantage of his time-saving assistance?

GraybaR

IN OVER 80 PRINCIPAL CITIES. EXECUTIVE OFFICES: GRAYBAR BUILDING, NEW YORK 17, N. Y.

GraybaR QUALITY *Reg. U.S. Pat. Off.

75 YEARS OF *Electrical Distribution*



FOR PERFORMANCE PER DOLLAR INVESTED

—No Other Material Can Equal ALLOY STEELS

—Great strength to do the strenuous tasks.

—Super-toughness to withstand shocks and strains.

—High strength to weight ratio to reduce weight without sacrifice of strength.

—Uniform hardenability to provide long-wearing surfaces.

—Resistance to corrosion—to fatigue—to elevated temperatures and sub-zero cold.

Republic Alloy Steels consistently provide this advantageous combination of qualities.

That's why they rank up at the top when comparisons are made on performance per dollar invested.

Are you using Republic Alloy Steels for difficult applications where other materials just do not give the service you would like?

If not, here may be a chance to obtain highest performance in your equipment at a low end cost figure per year of service.

A Republic metallurgist can tell you—*promptly*. He knows alloy steels and what they can do. And he has at his fingertips the experience of the world's largest producer of alloy and stainless steels to further assist him in giving you an authoritative answer.

Write us—*TODAY*.

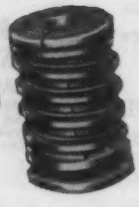
REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Berger Manufacturing Division • Calvert Division
Niles Steel Products Division • Steel and Tubes Division
Union Drawn Steel Division • Truscon Steel Company
Export Department: Chrysler Bldg., New York 17, N. Y.

Republic
ALLOY STEELS

Also Carbon and Stainless Steels—Sheets—

A.A.R. CAR IMPROVEMENT PROGRAM *Succeeds* Under Difficult Limitations

CARDWELL M-25
FRICTION DRAFT GEAR
Certified A.A.R.



CARDWELL FRICTION
BOLSTER SPRING
Type A

WESTINGHOUSE HY11-F
FRICTION DRAFT GEAR
Certified A.A.R.

The Car Improvement Program was originated and has been carried on by the A.A.R. Mechanical Division under difficult limitations.

The necessity of universal interchange; the large number of old cars not worth the cost of extensive improvements; the differing requirements, standards and preferences of the many railroads involved; the financial ability of the railroads to carry out the improvement schedules; the varying capacity of railroads to install and maintain improved equipment — all had to be considered.

The program not only strengthened car structures but increased their protection against shocks.

Over 98% of the cars in freight carrying service are A.A.R. construction, and over 96% have Friction Draft Gears.

The shock-absorbing capacity of Cardwell and Westinghouse Draft Gears provides protection for both cars and lading, with an ample factor of safety, resulting in increased availability of equipment.

CARDWELL WESTINGHOUSE CO., CHICAGO
CANADIAN CARDWELL CO., LTD., MONTREAL

TEMPERATURE COMFORT FOR EVERY PASSENGER!

The Post-War Passenger will be the "King or Queen of Travel."

Railways and car builders, together, will produce a post-war passenger car that will attract and maintain an increasing volume of business.

New cars with added comfort-features, and probably arranged for seating fewer passengers, must be operated at full passenger capacity to maintain post-war profits.

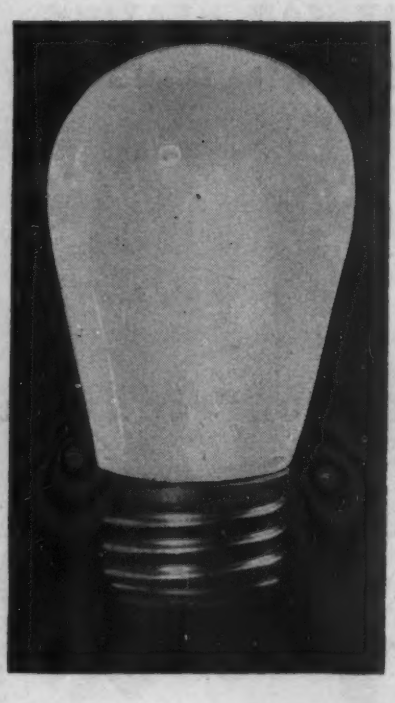
The "King and Queen of Travel" will "Command performance" of comfort control in the post-war passenger car. Vapor Car Heating Company's post-war heating and temperature control equipment provides *"temperature comfort for every passenger."* This is accomplished by the unique and simple method of zoning interior of car, and proper distribution of heat in the zones of temperature difference.

Vapor regulators and underneath equipment offer simplicity and steam economy, and an efficiency that will permit heating the longest train with satisfaction.

Write for Bulletin No. 1022 for full details.

VAPOR CAR HEATING CO., INC.

80 EAST JACKSON BLVD., CHICAGO
NEW YORK • SAN FRANCISCO
PHILADELPHIA • ST. PAUL
ST. LOUIS • WASHINGTON



Now a better G-E locomotive cab lamp . . . it's inside frosted!

- Means greater eye comfort for men in the cab.
- More uniform illumination.
- Eliminates annoying glare.
- Reduces brightness of specular reflection from guages and polished surfaces.
- No increase in price.

DON'T FORGET . . . the aim of General Electric Lamp Research is to make G-E Lamps Stay Brighter Longer

MAZDA

MAZDA

Lamps marked G-E bring you the benefits of over 50 years of General Electric Lamp Research . . . more and more light at less and less cost.

G-E MAZDA LAMPS

GENERAL ELECTRIC

BUY WAR BONDS AND HOLD THEM

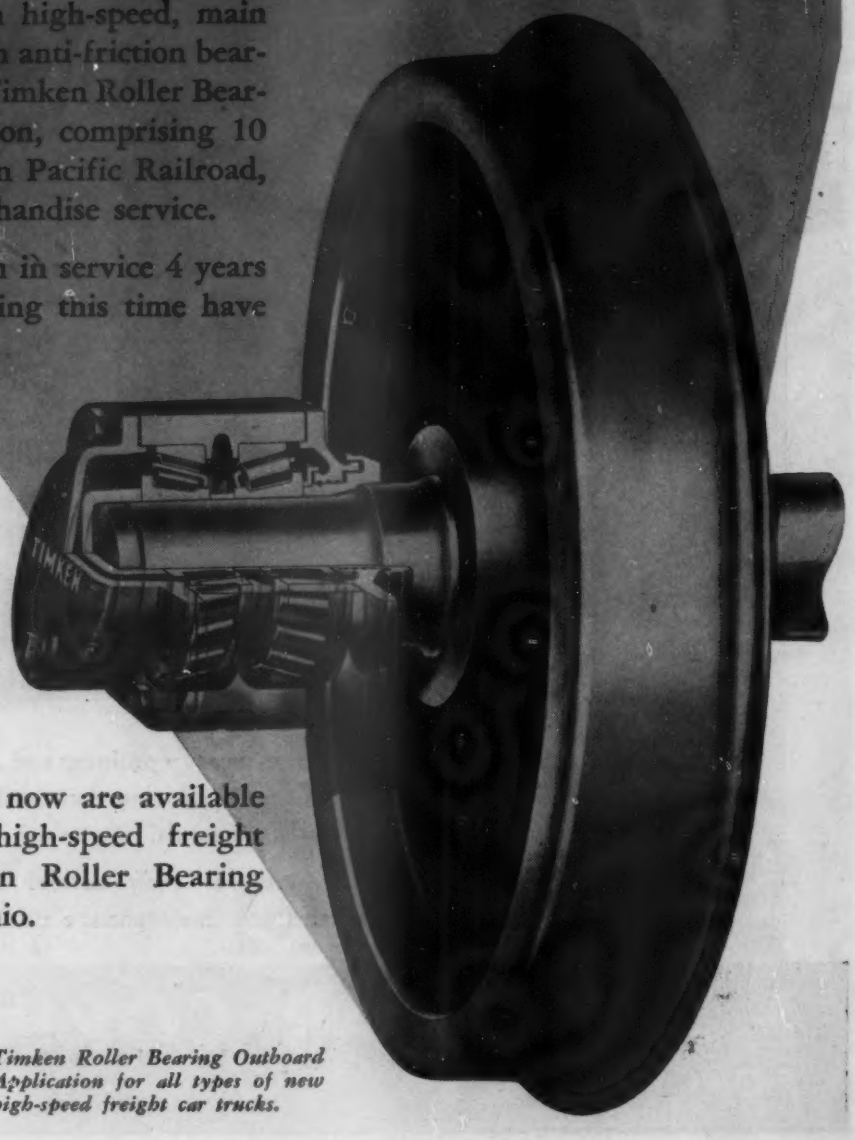
Hear the General Electric radio programs: "The G-E All-Girl Orchestra", Sunday 10 p. m. EWT, NBC; "The World Today" news, every weekday 6:45 p. m. EWT, CBS.

TIMKEN Bearing Equipped High-Speed Freight Cars Roll Up 2,303,010 Miles On The UNION PACIFIC

The only freight cars in high-speed, main line service equipped with anti-friction bearings, are equipped with Timken Roller Bearings. One such installation, comprising 10 box cars, is on the Union Pacific Railroad, used in high-speed merchandise service.

These box cars have been in service 4 years and 10 months and during this time have averaged over 4,000 miles per month per car without a moment's trouble or delay due to bearings. The average mileage per car during this period was 230,300 miles. The highest total mileage credited to any single car is 265,649, made by car No. 9192.

Timken Roller Bearings now are available for all types of new high-speed freight car trucks. The Timken Roller Bearing Company, Canton 6, Ohio.



TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS

Timken Roller Bearing Outboard Application for all types of new high-speed freight car trucks.

BEGIN WITH THE SEAT when you build Comfort!

DRESS up your coaches, streamline engines and cars, but if you want to build downright passenger comfort, begin with the seat. It's the wedge of all riding comfort! Wartime riders will judge your entire road, as always, by the built-in comfort of coach seats; by the ratio of pitch between the backs and cushions.

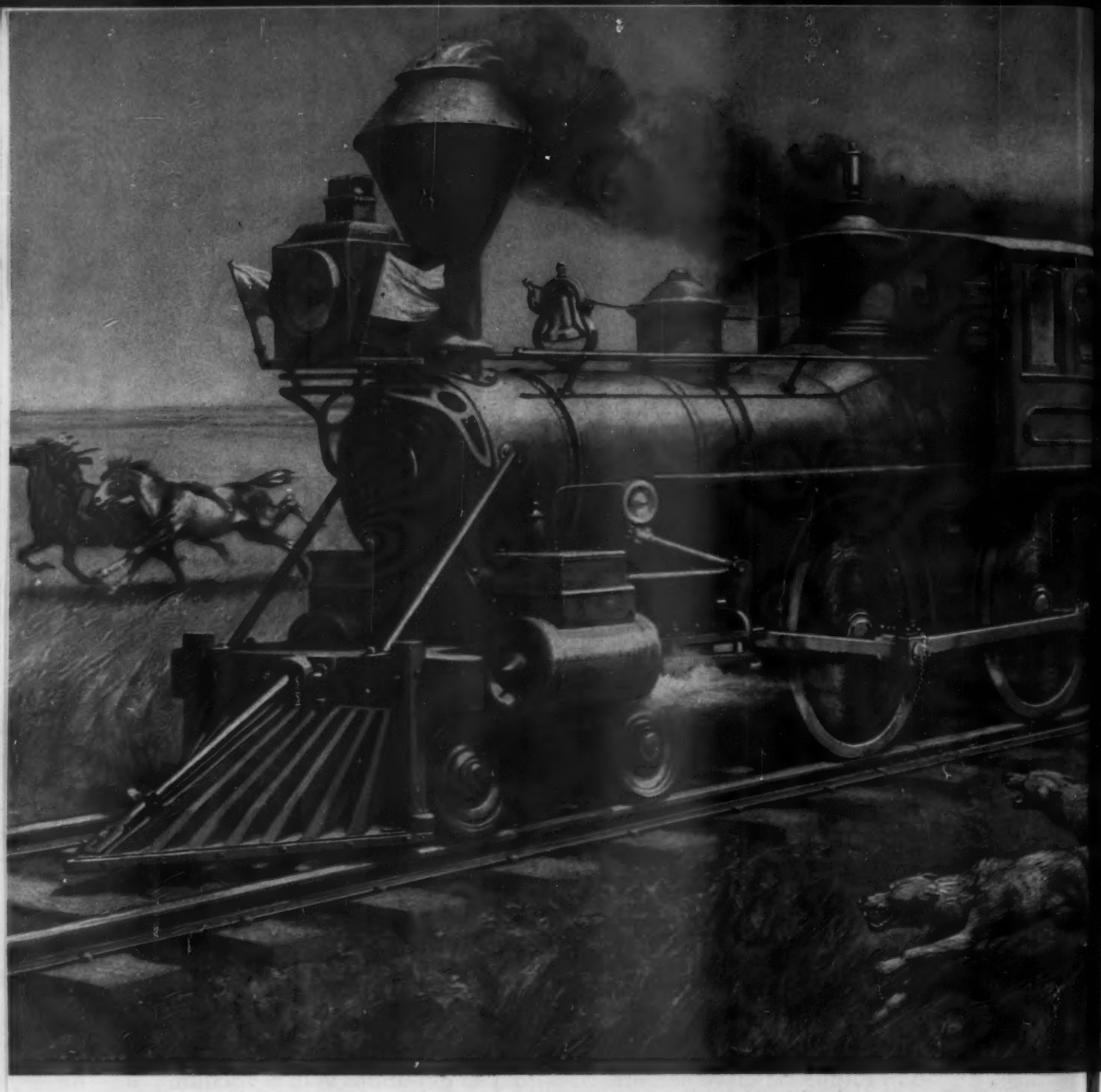
AS America's leading builder of carefully engineered railroad seating, Heywood-Wakefield contends there is no need to compromise on comfort. Take the smartly designed seat above, for example. Note the well-padded, tubular steel armrests; the reclining, spring filled backs; the thick cushions which adjust themselves to the most comfortable position with each reclining angle. It's lightweight construction . . . rotates on close centers . . . is easy to get under with a vacuum. It is a seat with every comfort and mechanical advantage simply because it is engineered the sensible Heywood way!

MAY we help you with your seating problems now . . . and in the postwar era? You will find us willing and able, and there is no obligation on your part.

HEYWOOD-WAKEFIELD

Established 1826 . . . Gardner, Massachusetts

TRANSPORTATION SEATING DIVISION



HAZARDS OF EARLY RAILWAY TRAVEL across the Western Plains. Passengers, as well as crew, joined the defense against marauding bands.

COURAGE...

It took the persistent, sustained enthusiasm of far-seeing men to initiate the steam railroad as the perfect answer to America's need for better, faster transportation—the courage born of conviction.

And it took sheer physical courage to run those shining ribbons of civilization across the wide western prairies where hostile tribes fought progress with open warfare.

But whether the obstruction was the inertia of ignorance, the armed antagonism of barbaric tribes or the awesome natural barriers of towering mountains, the railroads persevered and conquered.

The present day demands upon American rails are even more formidable. To transport the output of the greatest production period the world has ever seen—to move millions of service men—and to continue to meet the essential needs of civil life—this has been the task imposed upon our modern railroads. Their accomplishment is a brilliant example of the ingenuity, persistence and fortitude that has made and will keep America great.

To insure a safe continuance requires eternal vigilance and unceasing care of roadbeds and rails. Rapid mobility of maintenance crews is a vital essential in this all important work.

Near the turn of the century, Fairmont constructed their first power unit to propel section cars. Railroad maintenance men, quick to see the possibility for saving in energy and man hours, collaborated with Fairmont engineers in perfecting and extending the idea.

OF ALL THE CARS IN SERVICE TODAY.

Builders of America's first transcontinental railway were compelled to work under guard and suffered attacks almost daily from hostile Indians.

Today, thousands of Fairmont motor cars—ranging in size from small inspection cars to large gang cars accommodating crews and essential material—are operating on the railroads of America. Their steady, dependable performance and over-all efficiency are affording substantial aid in the imperative call for saving of time, energy and man-power. Fairmont Railway Motors, Inc., Fairmont, Minn.

Fairmont

RAILWAY MOTOR CARS

Performance ON THE JOB COUNTS

A3 Series C—A true heavy-duty car with Hercules 4 cyl. 20 H.P. Engine and 4 speed transmission, forward or reverse. Operates efficiently and economically. Ask for Bulletin 403.

. MORE THAN HALF ARE FAIRMONTS

OPEN SESAME

IN the old Arabian Nights tale, Ali Baba opened the door to the treasure cave by uttering the magic words "Open Sesame."

But with the N. P. End Door Operator, your passengers won't even have to know a secret password. To open the end doors of your cars, they will merely release the latch, when the End Door Operator will instantly and effortlessly open the door for them, and positively close it behind them.

Safe, easy to install and maintain, this device is as great an advance in end door operation as the self starter was for the automobile—and it will be just as much appreciated by your passengers.

Complete operating details will be furnished upon request.

The N. P. End Door Operator is a combined

- **DOOR OPENER**
- **DOOR CLOSER**
- **DOOR CHECK**

NATIONAL PNEUMATIC COMPANY

GRAYBAR BLDG., NEW YORK
MITTEN BLDG., PHILADELPHIA
McCORMICK BLDG., CHICAGO

Door Control **PLUS** *Dependable Service*

NP

...it pays to *Know!*

There's an absolute minimum of guesswork about the service qualities of steel castings produced by PSF. The tensile testing machine with stress-strain recorder, above, is only one evidence of the rigid laboratory control maintained over all PSF work, from the furnace on. That's your assurance of dependability. We *want* to know, and you *must* know!

46 YEARS OF STEEL CASTING KNOWLEDGE

Pittsburgh
STEEL FOUNDRY CORPORATION

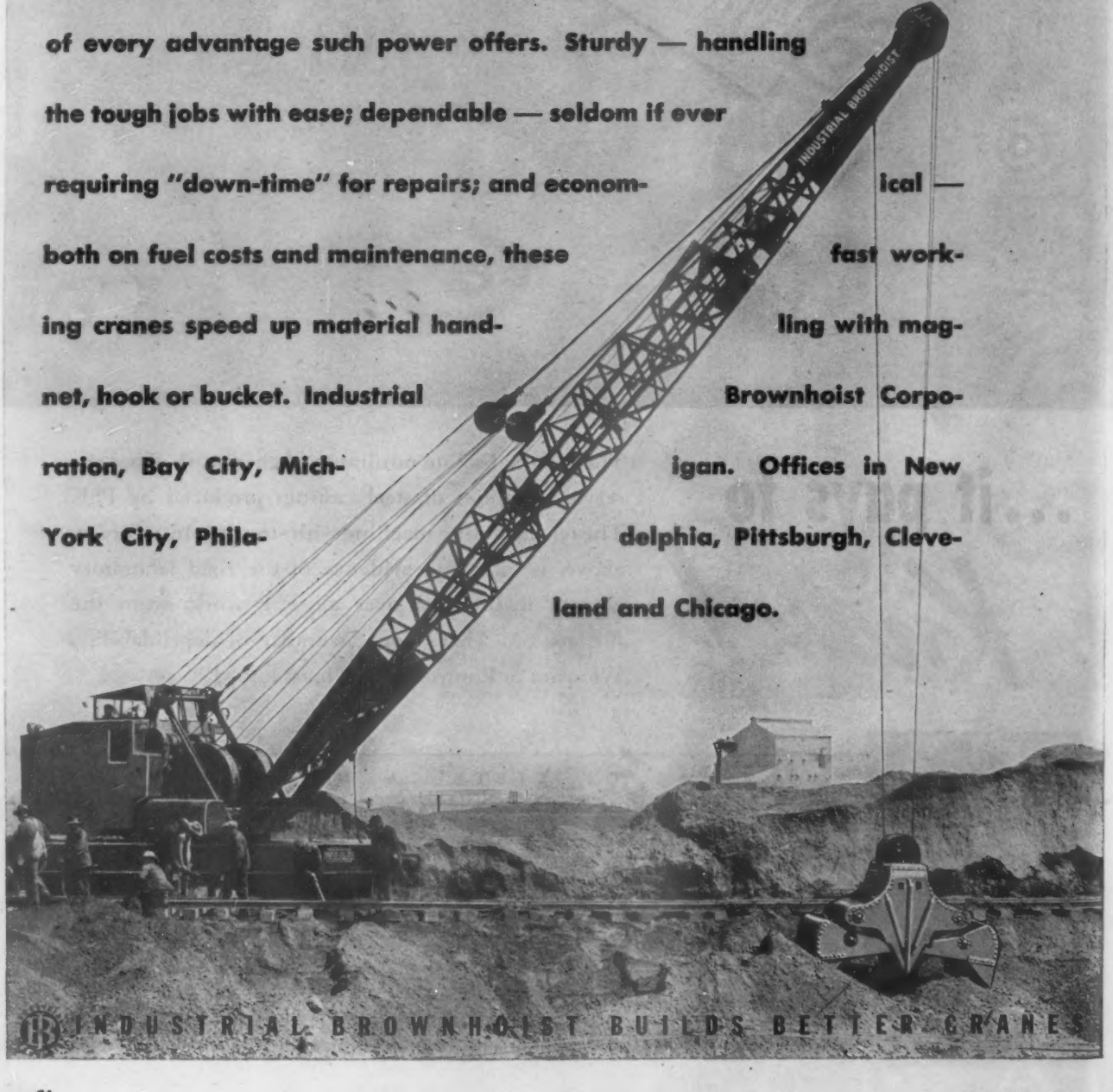
GLASSPORT, PA.

Sales Offices: NEW YORK • PHILADELPHIA • WASHINGTON AND CHICAGO

W&D 9381

Industrial Brownhoist Cranes

Over 60 years experience in designing and building the world's most complete line of locomotive cranes, has made possible the "stand-out" performance and dependability for which I.B. Cranes are famous. From rolled steel wheels to boom tips I.B. gasoline and diesel cranes are designed for internal combustion engine power and to make full use of every advantage such power offers. Sturdy — handling the tough jobs with ease; dependable — seldom if ever requiring "down-time" for repairs; and economical — both on fuel costs and maintenance, these fast working cranes speed up material handling with magnet, hook or bucket. Industrial Brownhoist Corporation, Bay City, Michigan. Offices in New York City, Philadelphia, Pittsburgh, Cleveland and Chicago.



INDUSTRIAL BROWNHOIST BUILDS BETTER CRANES

Great Travelers of Yesterday

Had TIME been published in 1871, these are the words with which H. M. ("Dr. Livingstone, I presume") Stanley might have described the long-lost, ailing missionary—finally found living in the native village of Ujiji—too fascinated by Africa and his search for the source of the Nile to want to return to the civilized world he had left behind—years before.

For Great Traveler Stanley would almost surely have been a faithful reader of TIME, *as most travelers are today.*

GREAT TRAVELERS OF TOMORROW

FOR EXAMPLE, a copy of TIME (marked subscription number 3-50-GGH-9-230) is read every week by Great Traveler Jan Christian Smuts, Prime Minister of South Africa. And right here at home in any Pullman car or passenger plane, peacetime cruise ship or top notch hotel—you will find the people who read and prefer TIME.

It's easy to understand why TIME readers are such great travelers. They own better cars, they live in better homes, have about twice as much to spend as average Americans. Which all adds up to this: TIME readers are better able to afford travel—and *better* ways of traveling.

That's why TIME readers are America's most traveled million—why TIME has carried more Travel, Resort, and Hotel advertising than any other magazine for the past nine years!

Surveys show that TIME readers read many, many magazines—but again and again they vote they like TIME best. Naturally, the best place to reach these Americans-on-the-go is in the magazine they *prefer to all others.*

THE WAY TO REACH AMERICA'S MOST TRAVELED MILLION

Bring up the **reserves**

Style A-6-A Holland **Volute** *Snubber Springs*

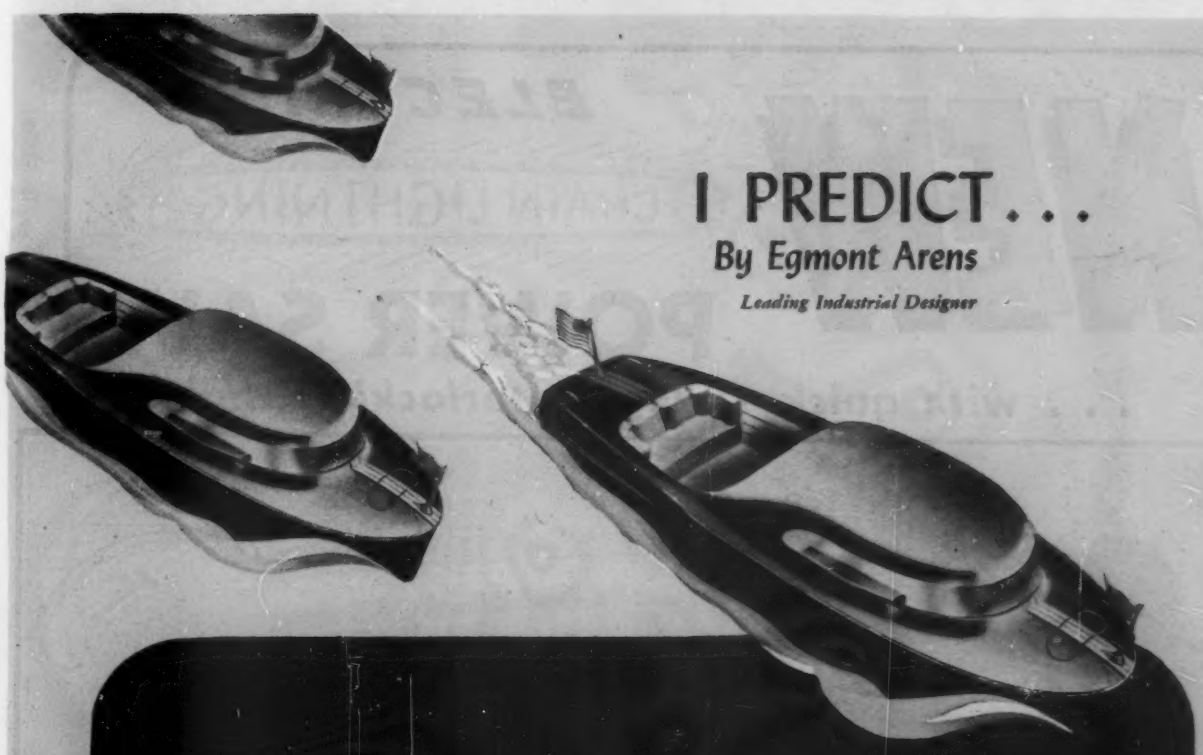
Signal Corps Photo

Release ONE A.A.R. Coil Truck Spring out of EACH Nest!

*** A. A. R. Coil Truck Springs need the reserve shock capacity of Holland Volute Snubber Springs in order to stand up under the intensified pounding of today's heavier loads and higher speeds.**

Uncle Sam Uses Volute Springs on Many Tanks

HOLLAND COMPANY 332 SO. MICHIGAN AVE., CHICAGO



I PREDICT . . .

By Egmont Arens

Leading Industrial Designer

I predict quantity production, right after the war, of unsinkable boats with continuous skins, tougher and lighter than wood, hull and top sides molded in one piece of Co-Ro-Lite, a new molding material consisting of plastic bonded rope fibres. Scale models of such boats are now being tested under a variety of conditions, and hulls of similar construction up to 32' have already been successfully molded. Light weight, speed and low cost will be overall outstanding features. The skin-stressed monocoque construction produces a light weight hull and top. An aluminum aircraft-type engine, housed out of the way in a small space under the aft deck, will provide speed and low operating expenses. Production by molding assures low initial cost, and a one-piece hull, eliminating yearly overhaul and caulking, means low upkeep. Thus motor-boating will be a pleasure everyone can buy with their War Bonds when Peace is restored.

* * *

Note: The Weatherhead Company, one of the oldest and most important manufacturers of parts for the aviation, marine, automotive and other key industries, looks forward to the day when its four plants will be contributing to peacetime needs.

Look Ahead with

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO

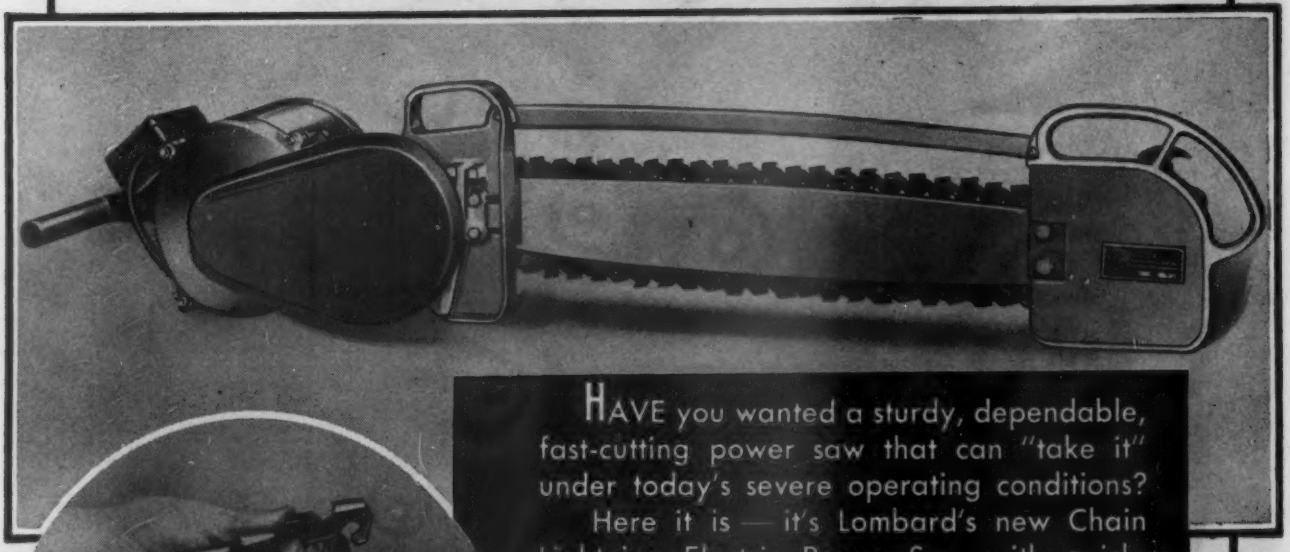
Manufacturers of vital parts for the automotive, aviation, refrigeration and other key industries.

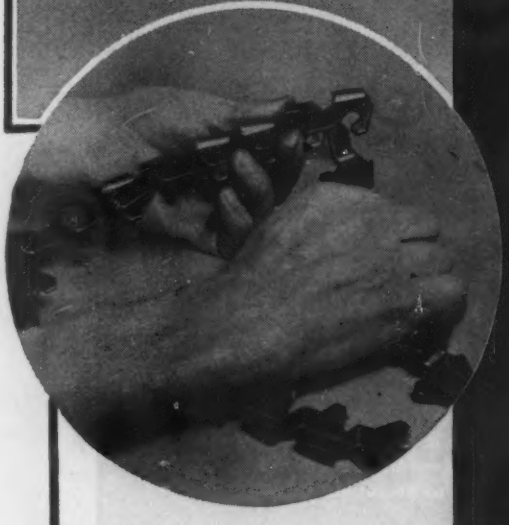
Plants: Cleveland, Columbia City, Ind., Los Angeles
Canada—St. Thomas, Ontario

FREE: *Write on company letterhead for "Seeds Of Industry"—a history of The Weatherhead Company, its many facilities and diversified products.*

NEW ELECTRIC CHAIN LIGHTNING POWER SAW

. . . with quick-change interlocking chain





HAVE you wanted a sturdy, dependable, fast-cutting power saw that can "take it" under today's severe operating conditions?

Here it is — it's Lombard's new Chain Lightning Electric Power Saw with quick-change Interlocking Chain, and it's available *now* on suitable W.P.B. approval.

Note these exclusive features — *New Interlocking* Chain which may be replaced on the job in a few minutes' time, just by hooking and unhooking. *New Helper's End* quickly detachable if saw is pinched by the log. *New One Shot Lubrication* for speedier cutting.

These and other exclusive features available now in either Electric or Air Models.

BRING YOUR POWER SAW UP TO DATE WITH LOMBARD'S NEW REPLACEMENT UNIT . . QUICKLY AND EASILY ATTACHED TO POWER SAWS NOW IN USE

Many loggers are modernizing their equipment by using the Lombard Replacement Chain Unit consisting of Chain, Guide Bar, Driving Sprocket, Idler Sprocket, Helper's End, Shear Pin on Drive Sprocket, and Chain Tension Adjusting Screw. May be quickly and easily attached to almost any existing saw unit. Quick delivery assured on suitable priority. Write for information, giving make, year and model of your saws.

ARMY E NAVY

LG LOMBARD Governor CORPORATION

ASHLAND MASSACHUSETTS

Sales Office: 60 East 42nd Street, New York 17, N. Y.

There's something coming in its wake for you ____

NEW POWER FOR A NEW WORLD

All of us are beginning to hear lots of talk about the "lessons of war." Here's something specific on the subject. We are now producing engines for the fastest, hardest-hitting battle craft in all history...engines which emphasize the true meaning of efficiency, ruggedness and dependability. These engines will open up a new era of power for the industrial and engineering projects of peacetime America.

For civilian purposes of a hundred sorts Sterling will provide engines greatly improved over pre-war designs. They will utilize the best of the wartime developments in the science of metals. They will be the product of the toughest proving ground of all time—the fighting fronts of the world.

Let's start working together now on your engine needs. It is not too soon for you to put together a well organized power program. We are glad to make available the technical ability of highly qualified engineers and the invaluable experience of practical field men.

STERLING ENGINE COMPANY, Buffalo, N.Y.
Offices in New York, Washington, Chicago.

Oil through the busiest "highways" in the world—the pipe line—is hurried along by Sterling powered pumps.

Fishing fleets will need dependable, low cost power—the kind of power that Sterling engines can provide.

A new era in railroading will be marked by higher standards of power efficiency, aided by Sterling engines.

The harnessing of our natural resources will continue, with Sterling engines offering an immediate emergency power.

ETC. From air conditioning units to waterworks, wherever the need for power exists—there'll be a Sterling available.

STERLING ENGINES

GASOLINE | DIESEL | GAS

"KEEP BUYING WAR BONDS"

From MITE *to* MAMMOTH

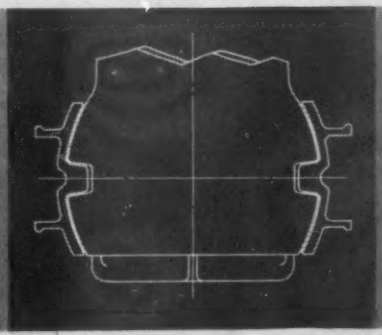
Magnus Satco-Lined and Satco-Faced Bearings are available in all sizes, for all types of service. Satco Bearing Metal retains its hardness and compressive strength at temperatures far above the melting points of conventional bearing metals.

SATCO *Bearing Metal*

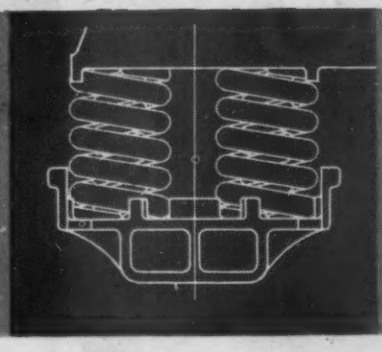
MODERN HEAVY DUTY BEARINGS

MAGNUS METAL CORPORATION
CHICAGO NEW YORK

THE A·S·F *Basic* FREIGHT-CAR TRUCK



Here is a rugged truck of simple design. It combines all the essentials of a good freight-car ride with the low-maintenance benefits of simple construction. To illustrate, the A. S. F. Basic Freight-Car Truck is held together by tongues on the side frame columns that mesh with grooves in the bolster. Curved surfaces between side frame columns and bolster minimize column wear, eliminate binding, and assure generous contact areas to provide dependable operation.



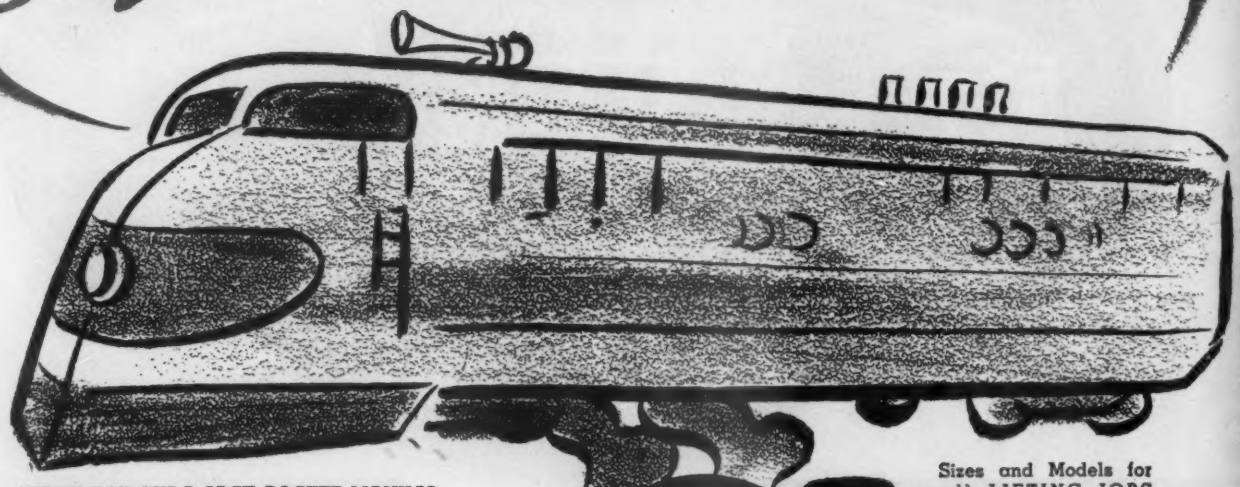
Of simple construction, too, is the flanged spring seat that is an integral part of the side frame. Every side frame and bolster meets all A. A. R. strength requirements. And for greater utility, the Basic Truck can be used with either all-coil spring groups or combination snubber-coil spring groups. The Basic Truck is a safe freight-car truck.

AMERICAN STEEL FOUNDRIES

CHICAGO

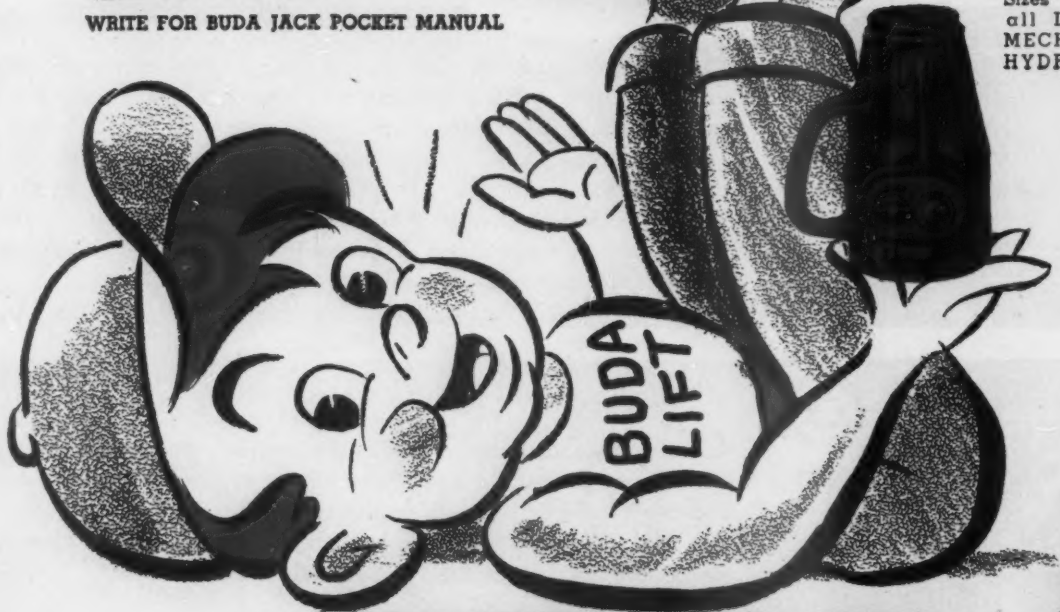
MINT-MARK OF FINE CAST STEEL

Tough railroad lifting jobs are easy for me . . . I am the *Lift* in every sturdy BUDA JACK



WRITE FOR BUDA JACK POCKET MANUAL

Sizes and Models for all LIFTING JOBS MECHANICAL AND HYDRAULIC JACKS

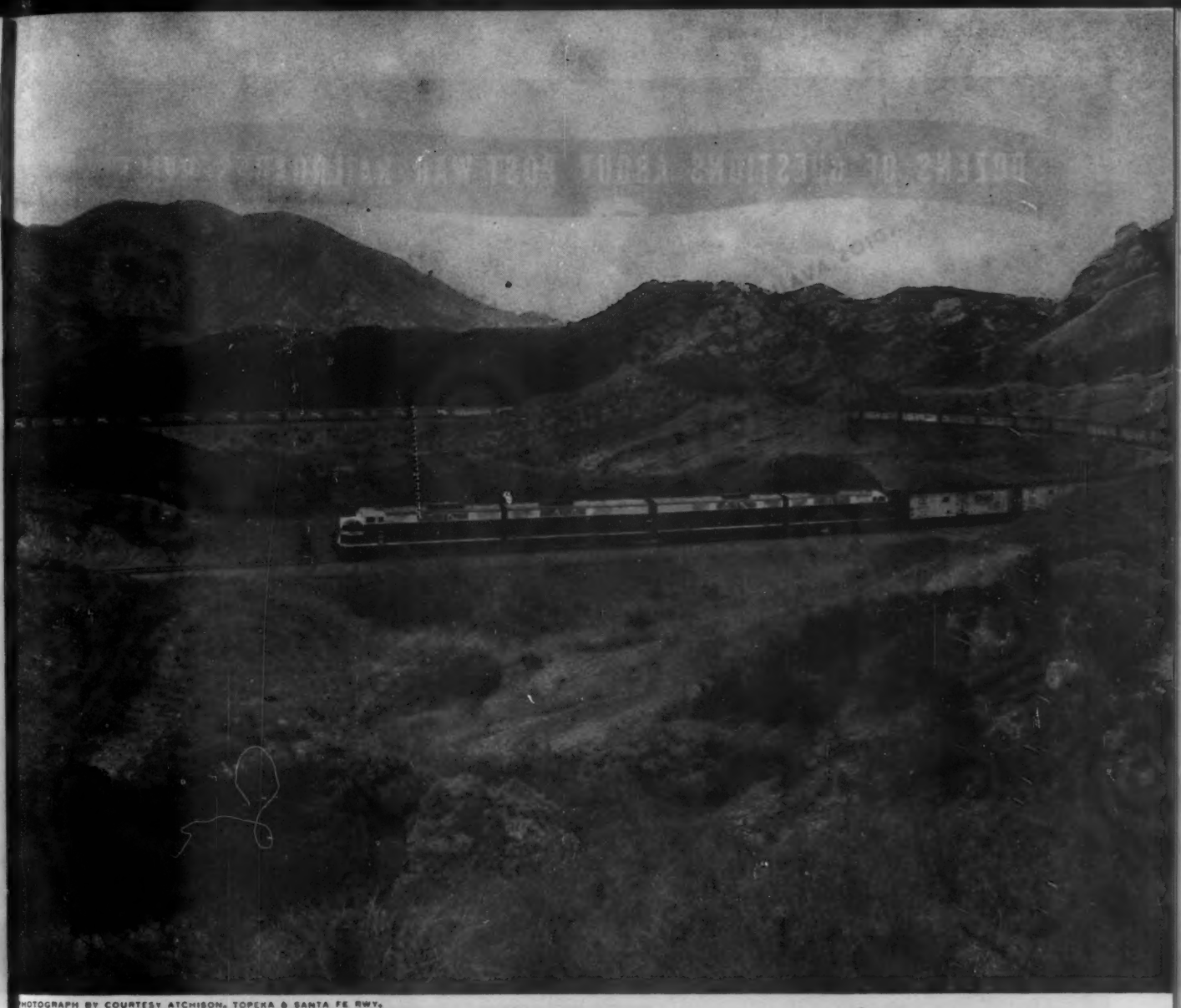


ARMY E NAVY

BUDA

THE BUDA COMPANY

15401 Commercial Ave. Harvey (Chicago Suburb) Illinois



PHOTOGRAPH BY COURTESY ATCHISON, TOPEKA & SANTA FE RWY.

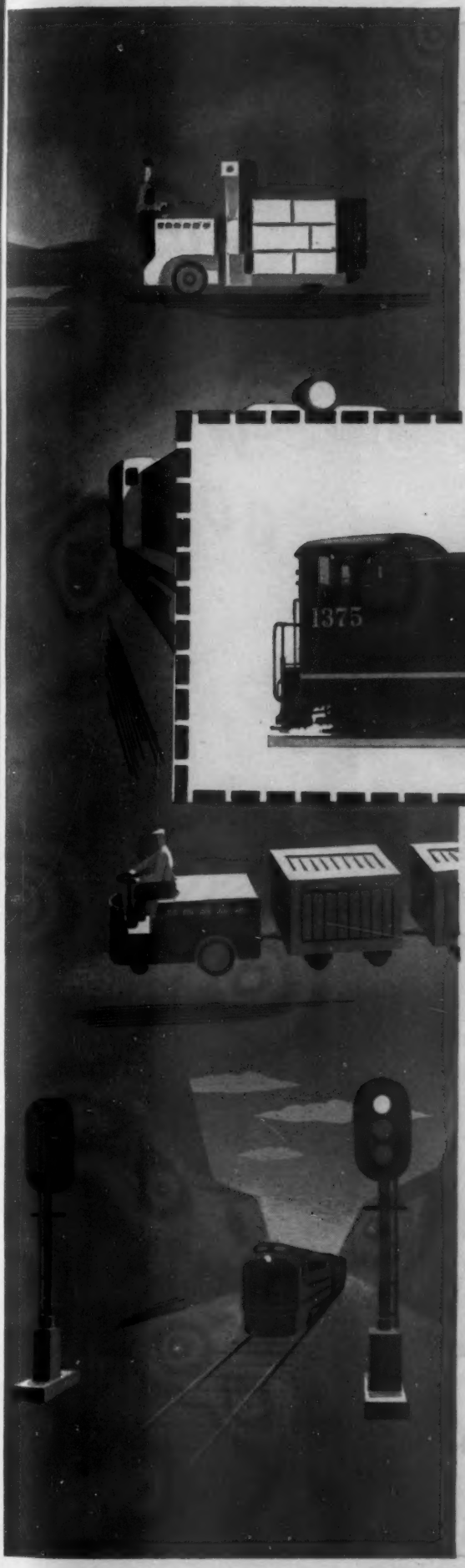
IMPROVED HIPOWERS

IMPROVE TRACK

In these days, when railway track is being subjected to the heaviest traffic in history Improved Hipowers are more important than ever in maintaining initial bolt tensions, assuring resilience of joints and protecting rail ends.

THE NATIONAL LOCK WASHER COMPANY, NEWARK, N. J., U. S. A.

A COMPLETE LINE OF RAILWAY SPRING WASHERS



RUGGED PHILCO BATTERIES

deliver the power you need when you need it!

● It pays to specify a Philco for every railroad battery job where extremes of service are encountered. The exclusive Philco construction developed and perfected through 50 years of industrial battery experience—provides a tremendous reserve of power. It gives you the extra wallop for hurry-up diesel starting. It assures dependable, efficient low-cost car lighting and air conditioning. And in your electric trucks, modern Philco Batteries, with 10% more ampere hour capacity, enable you to work your equipment longer hours—handle *tons* more freight per day. Write for latest catalog.

Philco Corporation, Storage Battery Division, Trenton 7, New Jersey

Philco type XMT-23, 56 cell Diesel Starting Battery

Specify PHILCO STORAGE BATTERIES

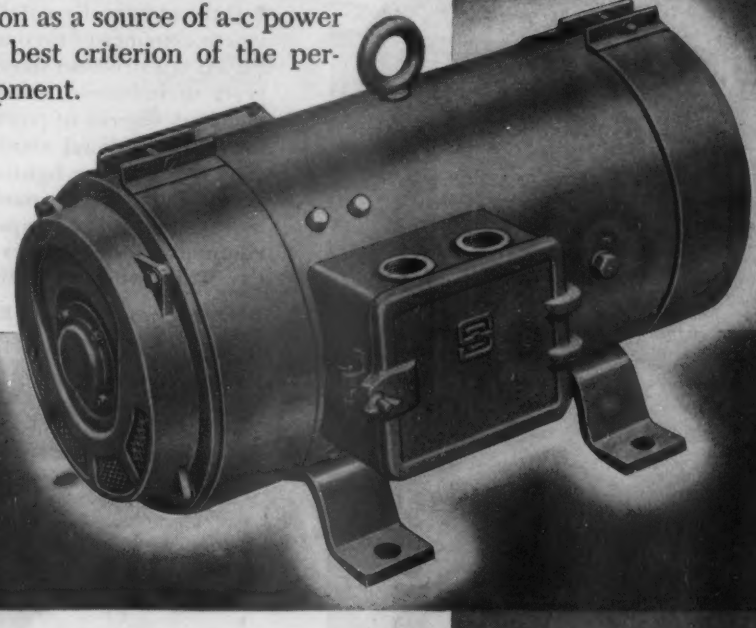
FLUORESCENT LIGHTING does require VOLTAGE and FREQUENCY CONTROL

The current in a fluorescent lamp is limited not only by the characteristics of the lamp but also by the auxiliary which must be in series with it to serve as a ballast. Fluorescent lamps are essentially arc lamps and as such, require some means of current stabilization. Lamp manufacturers have determined that rated lamp life can be expected from fluorescent lamps and their auxiliaries when the voltage of the supply is maintained between 110 and 125 volts, and frequency within 58 to 62 cycles.

The universal acceptance of the SAFETY MG-15 MOTOR ALTERNATOR with inherent voltage and frequency regulation as a source of a-c power on railway cars is the best criterion of the performance of this equipment.

BUY MORE WAR BONDS

Type MG-15
MOTOR ALTERNATOR



THE SAFETY CAR HEATING and LIGHTING COMPANY, INC.
NEW YORK - CHICAGO - SAN FRANCISCO - PHILADELPHIA - BOSTON - ST. LOUIS - MONTREAL

ARMY E NAVY

After 7997 hours in service . .

no measurable wear on

PORUS-KROME*

Photo courtesy of the New York Central System

In a test being made in a Diesel switching locomotive of the type shown above, no measurable wear was noted on PORUS-KROME cylinder surfacing after 7997 hours of operation . . . approximately one year in regular switching service.

This is another bit of evidence in the general experience that PORUS-KROME, applied to cylinders by the Van der Horst process, multiplies cylinder life 4 to 20 times. It makes the engine more reliable, too, because it eliminates a number of shut-downs for cylinder reboring or replacement . . . keeps the engine in operation many more hours of continuous running.

Whether it is used in engines of locomotives, or busses, or ships, or planes, or any other internal combustion engine, PORUS-KROME reduces to a minimum scoring, scuffing, ring feathering, and the risk of piston seizure. Let Van der Horst engineers show you how PORUS-KROME will lengthen the life of the cylinders in your engines, and lower the cylinder and ring maintenance cost.

*PORUS-KROME is pure chromium, applied by the Van der Horst process that produces pores to hold oil. It reduces wear, corrosion and scuffing, and greatly multiplies engine life when used on cylinder walls, or other bearing surfaces. May be obtained in Van der Horst plants or by license agreement.

PORUS - KROME

VAN DER HORST

Good for the Life of your Engines

VAN DER HORST CORPORATION OF AMERICA

OLEAN • NEW YORK
CLEVELAND 11 • OHIO

AN AFFILIATE OF DRESSER INDUSTRIES

There is an apparent discrepancy at this point.

The pages are either missing or the pagination is incorrect.

The filming is recorded as the book is found in the collections.

THOMAS

Punching and Shearing Machinery

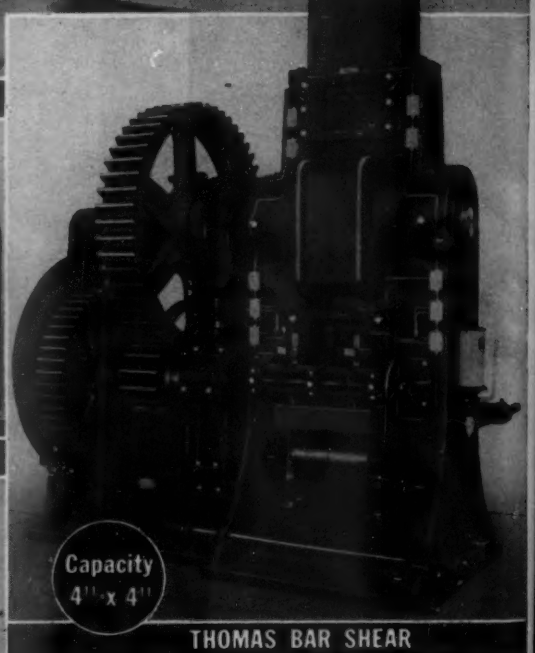
FOR THE CAR SHOP

For Plates and Shapes

THOMAS MULTIPLE PUNCH & AUTOMATIC SPACING TABLE

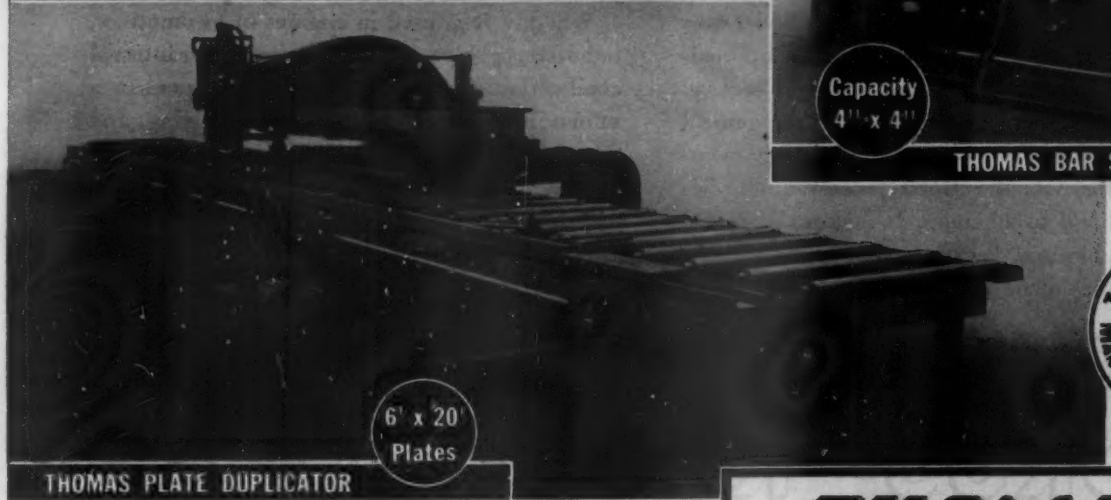
Capacity 300 tons

THOMAS BENDING AND STRAIGHTENING MACHINE



Capacity 4" x 4"

THOMAS BAR SHEAR



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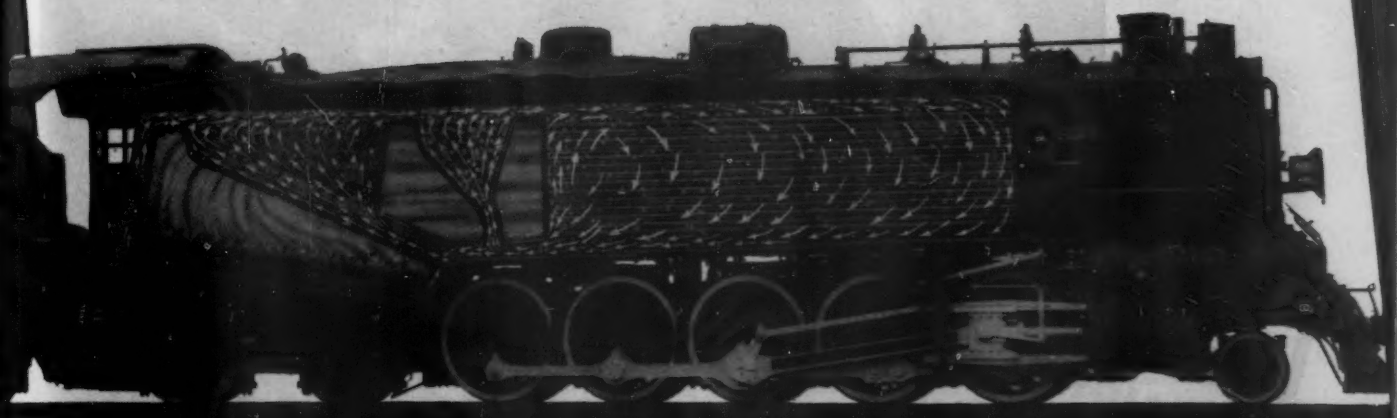

Syphons Definitely Increase the Circulation of the Entire Boiler!

As shown in longitudinal section they draw water rapidly past the area under the floor of combustion chamber (where this action is of great benefit) through the Syphons and over the crown sheet creating a circulation which extends to the forward section the whole length of the boiler.

It is important to note that the area of the outlet opening of the Syphons into the crown sheet is many times that of the intake at the throat sheet. This is most desirable and a real necessity for free circulation without excessive ebullition. A small outlet area as related to the intake always acts as a choke. The outlet opening must be materially greater than the area of intake in order to obtain a free exit for the steam and water.

24,547 Syphons Used on 9,858 Locomotives on 189 Railroads

Locomotive Firebox Company

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DESIGNERS OF POST-WAR CARS

In addition to air conditioning motor loads and increased lamp loads, modern streamlined cars often have other electrical conveniences which collectively play an important part in passenger comfort and put a premium on the light weight and dependability of the storage battery. Post-war cars, too, are expected to make extensive use of electric power.

IF you want to save weight wherever you can, you will be glad to know that the use of the alkaline battery is one way to do it. Not only is it the lightest weight type of battery available for railway-car service but it saves weight where it counts most—near the middle of the car.

If you want to have air conditioning, ample lighting and other electrical conveniences, you will find the alkaline battery useful for another reason—its unequaled dependability. You can have no better insurance of unfailing power for operating the electrical equipment on the car during non-generating time.

And whether you are planning to use the 32-volt, 64-volt or 110-volt system, you will find that the alkaline battery is time-proved in this respect too. It has been in successful operation for many years with all three systems.

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FOR LIGHTWEIGHT CARS


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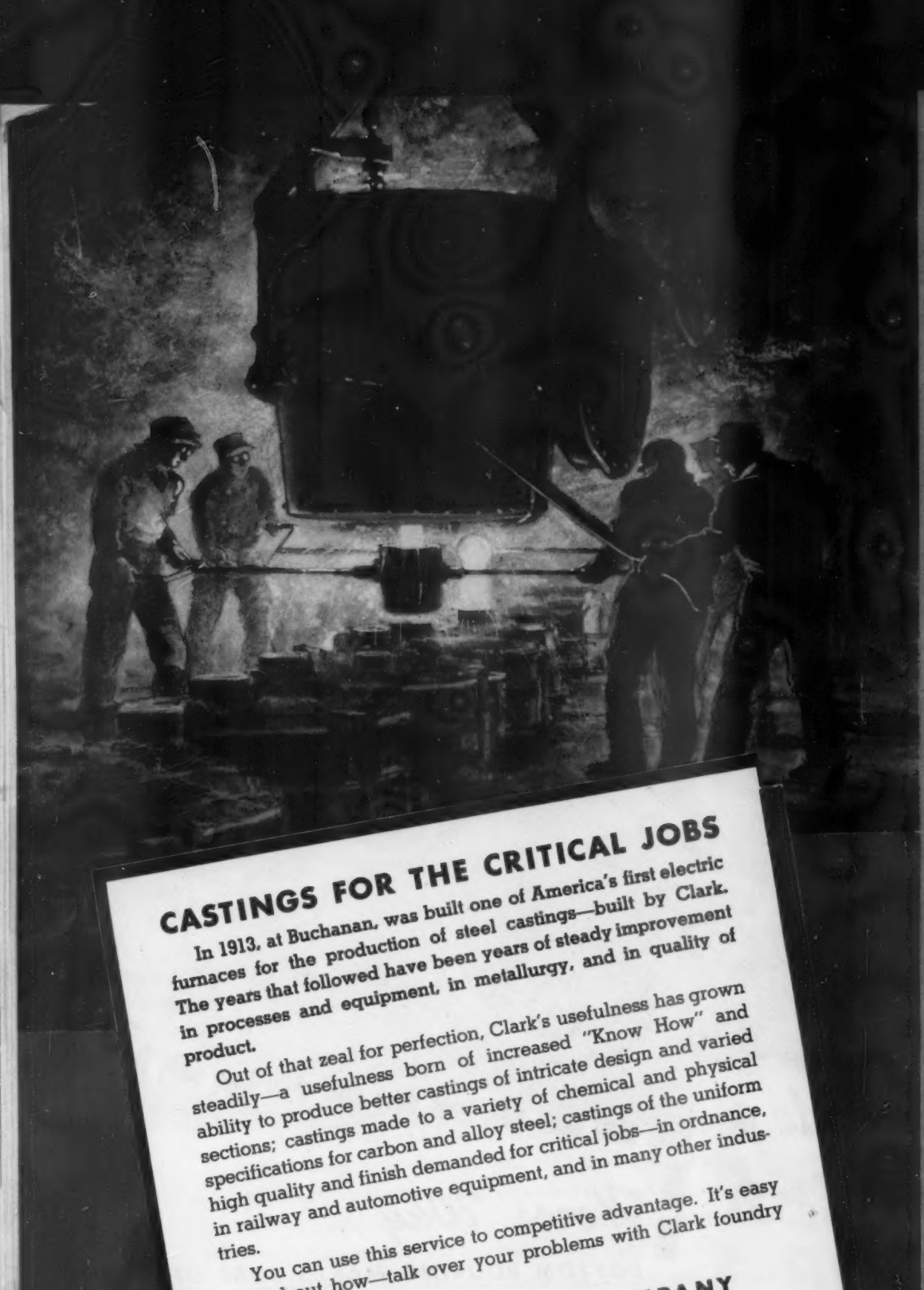

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In 1913, at Buchanan, was built one of America's first electric furnaces for the production of steel castings—built by Clark. The years that followed have been years of steady improvement in processes and equipment, in metallurgy, and in quality of product.

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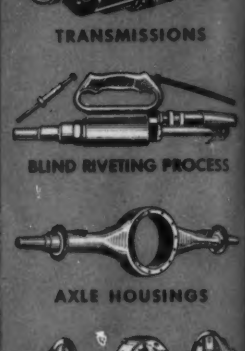

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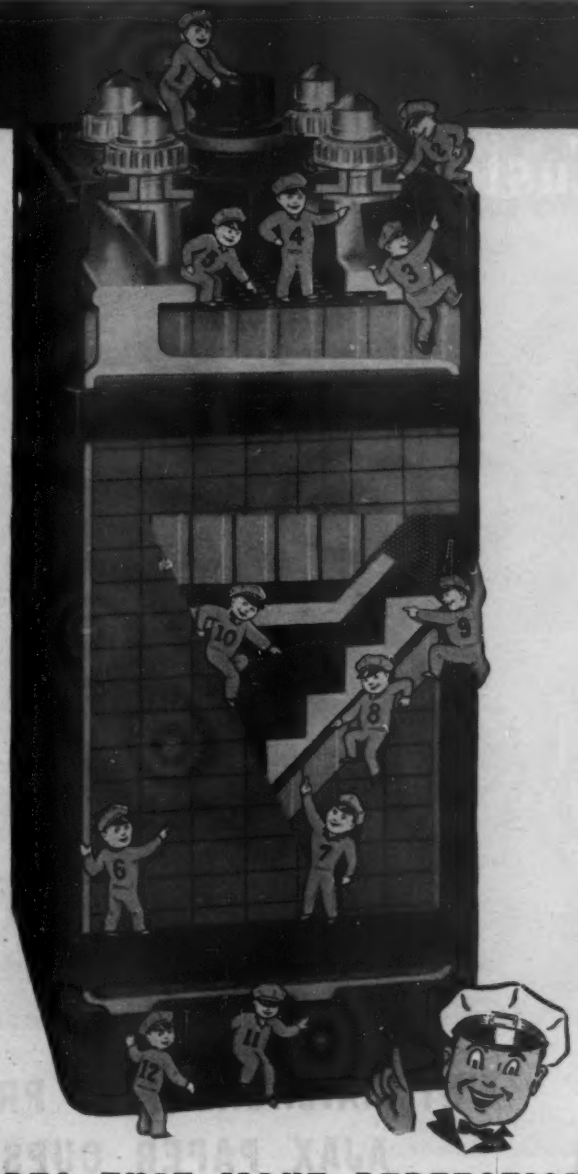

FEATURES THAT MAKE PERFECTION IN GOULD BATTERIES

Gould has been constantly testing and perfecting the design of the Gould Kathanode, while still retaining the revolutionary spun-glass mat protection first introduced by Gould to American industry.

Some improvements have been small, some large. Each has added to the battery's efficiency and has made it a better product. Together they continue to maintain the enviable twenty year record of the Gould Kathanode in meeting actual service conditions in all industries.

Write Dept. 57 for Bulletin 100 on Gould Kathanode Glassklad Batteries for Industrial Trucks and Tractors.

1 BAYONET TYPE VENT: Quarter-turn lock type readily removable for flushing and checking.

2 TERMINAL POST SEAL: Acid resisting soft rubber spool type bushing which acts as a cushion between post and cover. It is held in compression between a flange on post and an alloy nut to make an acid tight seal.

3 SEALING: Exceptionally deep recess between the jar walls and reinforced hard rubber cover is filled with a sealing compound of unusual elasticity and adhesion, to withstand vibration and insure a permanent seal.

4 CROSSBARS AND TERMINAL POSTS: Sturdy construction assures excellent conductivity and great mechanical strength.

5 SEPARATOR PROTECTOR: Perforated hard rubber baffle protects separators during testing.

6 NEGATIVE PLATE: Antimonial lead grid of interlocking bar design. The negative active material is a highly porous metallic oxide compounded to special Gould formulas. It assures close electrical contact, low internal resistance, and high sustained capacity in balance with the Kathanode positive unit.

7 DURAPOR SEPARATORS: Made of heat and acid resistant porous rubber with deep grooves and shallow web. They are mechanically strong and allow for free circulation of the electrolyte. Uniform chemical and physical properties assure balanced resistance throughout the cell.

8 PERFORATED RUBBER ENVELOPE: Holds the spun-glass mat in place and provides additional insulation.

9 GLASSKLAD RETAINER MAT: Retains the useful, power producing active plate material throughout battery life.

10 POSITIVE PLATE: Antimonial lead grid of heavy cross-section is the holding structure for the positive active material, especially developed for Kathanode by Gould.

11 SEDIMENT CHAMBERS: The Kathanode Glassklad retainer mat minimizes shedding of active material. As a result sediment chambers are reduced to less than half the height necessary in ordinary batteries. This permits the use of larger plates with more active material and a greater volume of electrolyte above the plates where it is most beneficial.

12 HARD RUBBER JARS OR MONOBLOC CONTAINER: Compounded to meet the rigid Gould specifications, providing great tensile strength and high impact resistance for long, uninterrupted service.

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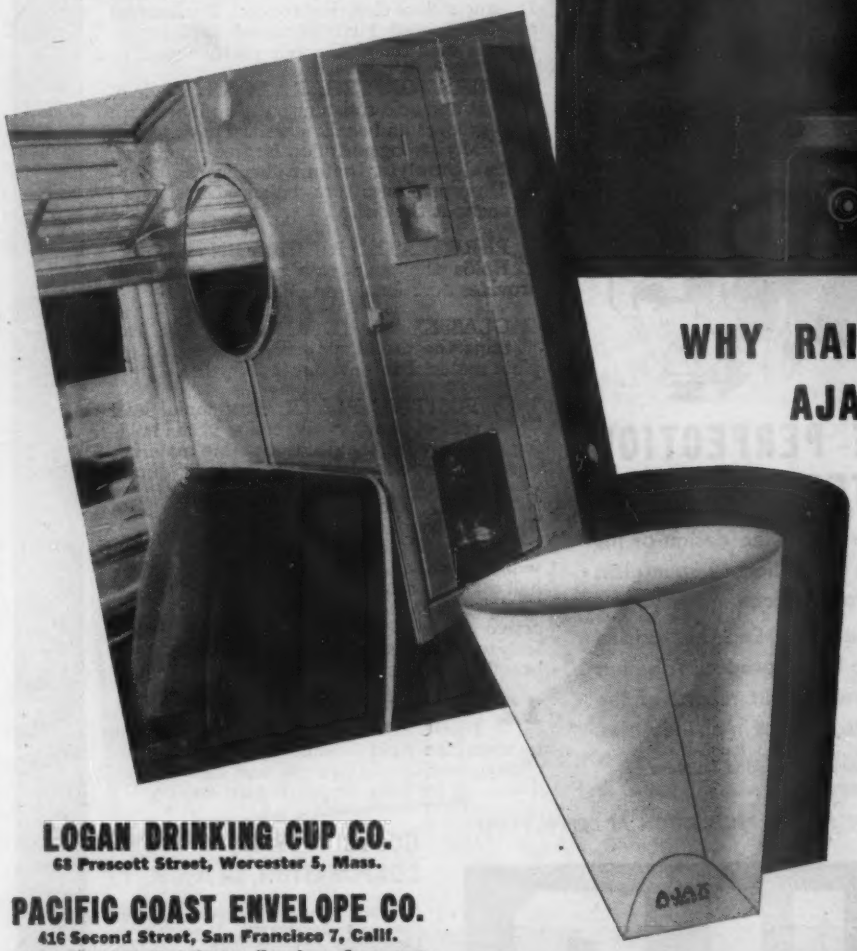

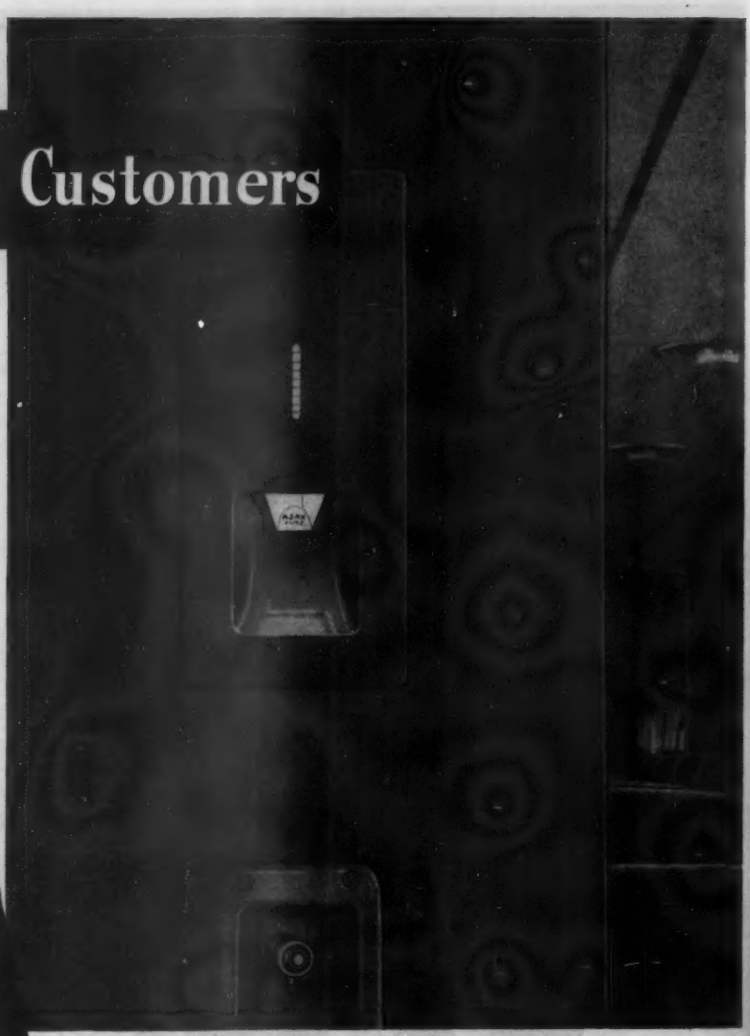

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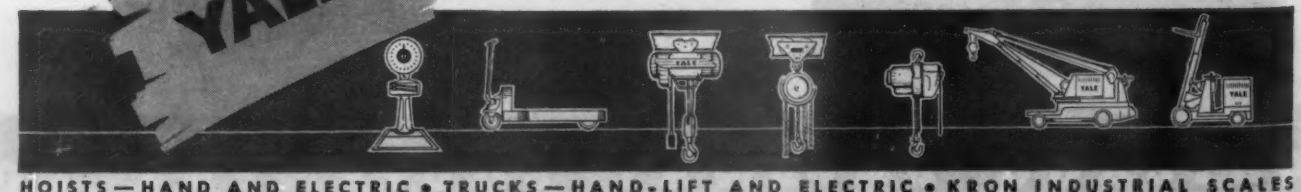

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Oliver Frog and Crossing bolts provide the extra strength and toughness needed for this service, through carefully selected steels and controlled heat-treatment. They are accurately made, cleanly threaded, grip tight and make safe, dependable connections.

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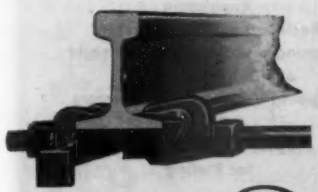
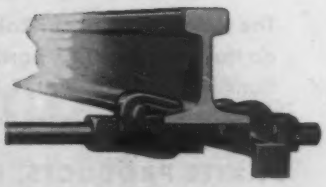
Oliver Gage Rods anchor both rails together in a single load-sharing unit. Engineered to maintain accurate gage on stiff curves, main switches, near rail crossings, they eliminate frequent re-gaging, excessive re-spiking.





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But there are other prime considerations. Pluramelt in general fabricates easier than solid stainless steel. And, under any conditions of fabrication and subsequent service, it does not—*cannot*—come apart. Pluramelt is unique—a controlled composite steel with an *intermelted* bond that cannot be separated.

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In This Issue

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

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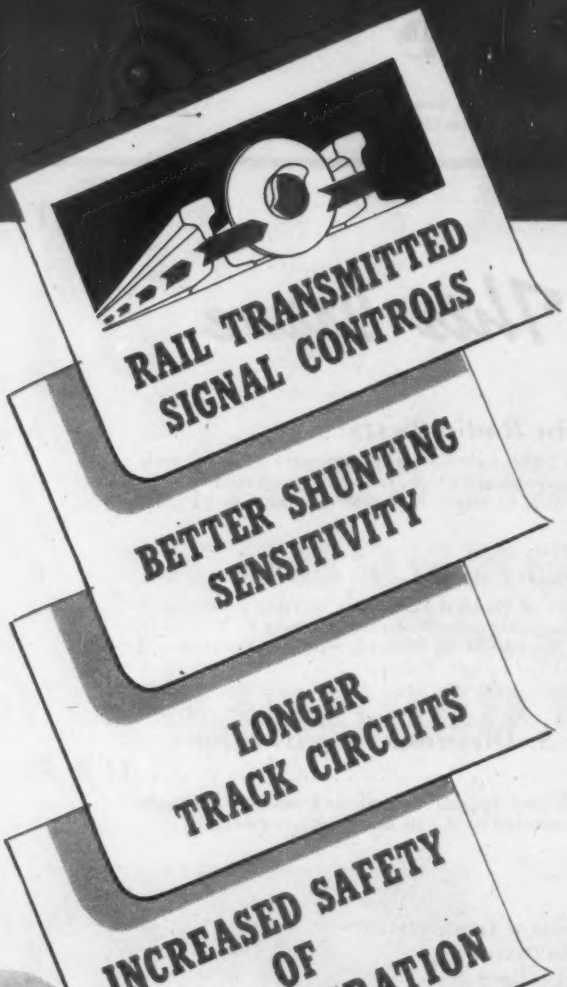
"UNION" CODED TRACK CIRCUIT CONTROL

is universal in application!



DURING the past 10 years, "Union" Coded Track Circuit Control has been installed on over 4,000 track miles on 24 American railroads. This modern system, which employs rail-transmitted coded current for the control of wayside signals alone or wayside and cab signals in combination, is universal in application. It has been used to advantage with practically all signal systems—on single and multiple-track railroads—in electrified and in steam-propulsion territories. Bulletin No. 157 fully describes "Union" Coded Track Circuit Control. Copies are available upon request.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

LOWER TRANSPORT COSTS: Statesmen among the shipping fraternity are realizing—and publicizing—the fact that *postwar transportation economy can best be fostered by magnifying traffic and net trainloads on the railroads.* The leading editorial in this issue examines this thesis further, and suggests that such economizing of costs be reflected in incentive rates which will induce transportation buyers to adopt and continue practices which produce these economies. Why, it is asked, should a shipper who uses the railroads only for extravagant (to the railroads) "stand-by" service and to balance his empty movement, be accorded the same rates as the customer who directs his traffic in some accord with the requirements of carrier economy?

●

RADIO BRASS TACKS: Hard on the heels of the widely-publicized test of train-end-to-end radio communication on the California-to-Chicago run of the Santa Fe's "Spud Special," some results of which are outlined in a feature article this week, comes an encouraging pronouncement from the Federal Communications Commission (reported in the news pages). This suggests that the hearings in which that agency will, this fall, investigate the present state of the art of communication as developed on the railroads are not intended to be conclusive, at least for the present, but possibly may become, instead, a sort of open forum in which some of the glittering new discoveries of zealous tenderfeet in this already-prospected field may be assayed in the light of practical experience.

●

WAYSIDE WATER DOSAGE: Some of the devices by which the hit-or-miss method of softening boiler feed water by dumping chemicals into the tender tank can be replaced by highly accurate mechanical proportioning processes for wayside water treatment are discussed this week in an abstract of an A. R. E. A. committee report on page 8.

●

PRIORITY TO WAR WOUNDED: There never has been any doubt that the wounded service men would get priority in passenger service over civilian customers—but the I. C. C. has now made such priority a legal obligation on the carriers by a formal service order, No. 213, issued under its statutory powers over car service. Every railroad ticket agent and conductor becomes, under this order, an agent of the I. C. C., authorized to brush space-holding civilians aside in favor of properly-certificated invalided service men. Civilians may also be removed from their space en route, in order to accommodate service invalids who come aboard at intermediate stations.

●

MORE RAIL, LESS LUMBER: Such will be the noteworthy characteristic of the railway supply situation during the remainder of the current year—in the opinion of General C. D. Young in a survey of the materials situation included in the "convention-in-print" of the Purchases & Stores division, A.A.R., published in this issue. Car and locomotive deliveries should be better this year than in '42 or '43. General Young believes that the railroads—including purchasing departments—could well afford to devote more attention than they have to informing and arousing the friendly cooperation of their personnel. Employees, if their interest were adequately awakened, could be a big help to the railroads in detecting weaknesses in materials and otherwise assisting the carriers to get more value from their expenditures for supplies.

●

WHY INVENTORIES ARE UP: Railroads have more than normal stocks of materials on hand—a natural development in view of heavy demands, retarded deliveries, and increased prices. Calling attention to this condition, Chairman Krampf of the A.A.R. Purchases & Stores division warns of certain dangers in it. There is likely after the war to be a radical change in the kinds of materials the railways will use, and there won't be much percentage in being caught at that time with large inventories of items which will thereafter be in small and diminishing demand.

●

P. & S. PUBLIC RELATIONS: Robert S. Henry reminds the purchasing officers in his "convention-in-print" article in this issue that they occupy a strategic position as representatives of the railroads to an important segment of the business community. To a large number of salesmen and other personnel of industry, a mention of "the railroads" means the aggregate of purchasing officers who *are* the railroads, in the estimation of such businessmen. Their opinion of the railroads will be, pretty much, the resultant of the competence and friendliness which they observe in railway purchasing departments; and their understanding of railroad problems will likely be only such as is imparted to them by the purchasing departments. The p. & s. department, as a large shipper and receiver of freight, also can serve a valuable function as a leader in loss and damage prevention—such is the message to these officers by Joe Marshall of the A.A.R., likewise published herein.

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HOW BARGE LINE PROFITED: The Inland Waterways Corporation, which operates the federal barge lines, reports a 1943 operating deficit of $120,871—but it sold some property at a profit and collected some "other income" to give it a "net income" of $178,012 (according to the "heads we win" idiosyncracies of governmental bookkeeping). The operating deficit in 1942 was $858,259. The report makes its customary claim of "savings" to the shipping community of about $1¾ million—under what these customers would have had to pay if they had shipped their freight all-rail. One may wonder how much of these "savings" got into the pockets of the people who paid the taxes to establish the barge line and construct the waterways it uses—and whether these taxpayers wouldn't have been better off without such "savings" if, in foregoing them, they had also been spared the expense whence these alleged "savings" have come.

"NONCOMPETING"?: Some of our surplus military aircraft, says a report sponsored by a Senate military affairs subcommittee, ought to be disposed of—at "sharply reduced prices," and after the needs of domestic and international commercial air lines are met—for what are blithely defined as "noncompeting" uses. Suggested as a possible way to employ some of these "low-cost" surplus planes is the allegedly noncompetitive business of contract carrier transport of fresh fruits from the far South to northern markets. While the authors of the report may be correct in implying that plane operators who have to buy and pay for new equipment could not compete for this kind of traffic, it is not so clear how they arrive at the conclusion that it might not develop otherwise, using other forms of transportation.

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GRAIN CARS "TIGHT": There is a heavy crop of winter wheat, and, on top of it, an abnormally high corn movement—which factors are combining to give the railroads quite a time of it to supply wheat cars when and where needed. Rains in the Southwest, delaying the harvest and putting it on the market just ahead of the Kansas crop, haven't been much of a help either. Still—the railroads are on the job as usual, and O.D.T. Director Johnson (as reported in the news pages herein) doesn't believe the wheat farmer will have to hold much more grain on the farm than in '42.

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STRAW-MAN "BARRIERS": An editorial in these pages discusses the fictitious "trade barriers" which long-haul truck operators continue to attack—and with growing public acceptance too, seeing that no reply to their preposterous assertions is ever made on a scale comparable to their repetitive and skillful complaints. The editorial shows that not more than one-third of one per cent of the country's long-haul traffic *could* be affected by these "barriers," even if they existed—so the contention that they are a serious obstacle to interstate commerce is, prima facie, a slight exaggeration. Further evidence reveals that a truck weighing 15 tons and 40 ft. long can circulate freely in 46 out of the 48 states. The "barrier" cry is, in actuality, an effort to magnify the sizes of long-haul trucks permitted everywhere, and to reduce to a still lower figure the pittance exacted from their owners as compensation for using public property as a plant facility.

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SAFETY IS STILL FIRST: The Harriman Award ceremony this year, in addition to the annual presentation of medals to the railroads with the best safety records, included also an award by the American Museum of Safety to the entire railroad industry in commendation of its unflagging consideration of safety in wartime. In this connection, Judge Fletcher pointedly called attention to the contrast between the record which won this special recognition and the propaganda which would lead the public to think the railroads indifferent to the promotion of the safety of their passengers and employees.

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RAILWAY AGE

Efficiency FOR VICTORY

How to Reduce Costs of Transportation

There is no circumstance of the present and prospective railroad situation more heartening than the growing understanding by leaders and students among shippers of the advantage *to them* of concentrating freight on the railroads rather than reducing the density of traffic on the railroads by diverting traffic to other carriers.

A. W. Vogtle of Birmingham, formerly president of the National Association of Shippers' Advisory Boards, has pointed to the results of intensive use of railway plant during the war as indicating to industry the best means by which it may secure maximum economy in its postwar transportation costs. By achieving a high degree of utilization of fixed plant—and especially by the aid which shippers have extended in magnifying the net load per train—the railroads have minimized the cost of their service per ton-mile, in spite of large increases in wages and prices of materials. The result is that railroad transportation is one of the few services or commodities for which purchasers are paying no higher charges than before the war, although the charges shippers are now paying the railroads cover the vastly increased taxes the railroads are paying the government.

Since maximum use of railroad facilities, and shippers' collaboration in maximizing the net load per train have proved economically so advantageous to shippers during the war (so Mr. Vogtle's argument runs, in substance) why not perpetuate these fruitful practices?

Railroad Charges and Costs per Ton-Mile

Year	Frt. Service Oper. Ratio (%)	Rev. Per Ton-Mi. (¢)	R. R. Cost Per Ton-Mi. (¢)	Year	Frt. Service Oper. Ratio (%)	Rev. Per Ton-Mi. (¢)	R. R. Cost Per Ton-Mi. (¢)
1925	71.24	1.098	.782	1935	64.74	.988	.640
1926	69.72	1.082	.754	1936	63.77	.975	.622
1927	70.29	1.081	.760	1937	66.32	.935	.620
1928	67.38	1.082	.729	1938	66.89	.984	.658
1929	66.96	1.077	.721	1939	63.97	.974	.623
1930	67.65	1.063	.719	1940	62.98	.946	.596
1931	68.62	1.051	.721	1941	61.05	.936	.571
1932	66.97	1.045	.700	1942	58.07	.932	.541
1933	62.82	.997	.626*	1943	61.76	.933	.576
1934	64.91	.978	.635				

The implications of this suggestion are far-reaching. The accompanying table shows average railway revenue per ton-mile and average railway costs per ton-mile (not including taxes and return on investment) for the years 1925-43, inclusive. The average *costs* per ton-mile are arrived at by multiplying the average receipts per ton-mile by the average ratio of freight service operating expenses to freight revenues. Since this last-named factor is derived from an arbitrary formula of the Interstate Commerce Commission for allocating joint costs between freight and passenger service, there can be no assurance that the estimated average ton-mile costs for *each year* are strictly accurate; but as the average costs in each year are estimated in the same way there can be no question that comparison of them indicates accurately the *changes* in costs that have occurred.

It will be noted that from 1939 to 1943 there was a decrease of about 4 per cent in average *revenue* per ton-mile, and a decline of almost 8 per cent in average *costs* per ton-mile. In 1944 the reduction in costs has probably been stopped by last winter's wage increase, but the downward trend in average revenue per ton-mile still persists. There is the further consideration that a larger margin between freight revenues and freight service costs than formerly is needed and justified because of the enormous increase which has occurred in taxes.

It is the comparison of present with pre-depression costs which

is really remarkable—the 1943 average ton-mile cost being 20 per cent below 1929, with average hourly wages 39 per cent higher. Average charges per ton-mile, meantime, were in 1943 about 13 per cent less than in 1929—a failure of decline in rates fully to correspond with the reduction in operating costs which is justifiable, as already stated, by greatly increased taxes.

The figures demonstrate the wholesome effect of intense utilization of plant in bringing down costs in the war years. It is well to note, in this connection, that the reductions in average charges which have occurred during the war can be accounted for largely by land-grant rate reductions. That is to say, government rather than private industry has derived much of the benefit from the economies which private industry has helped to effect. If private industry is to be induced to continue its economizing, the land-grant rate reductions must be rescinded so that the benefits of economy in transportation may be equitably distributed among those who help to achieve the economy. It must be evident, also, that a shipper who tries to save a dollar here and there (more "for the record" than actually) by diverting to highways or inland waterways traffic to which they have no true economic claim is actually promoting waste in transportation by increasing its overall cost.

Shippers such as Mr. Vogtle, who so well understand the economics of low-cost transportation, might profitably direct their constructive thought to a system of charges which will *induce* economical practices by shippers, by giving those who adhere to such practices the just rewards of their action. Where is the justice, sound economics, or social utility in affording to a shipper who uses the railroads more or less as a "stand-by" facility a rate no higher than that of a shipper who does his utmost, by concentrating his traffic on the railways, to promote genuine economy in transportation? One way to promote economy is to cause railway rates to offer shippers incentives for helping achieve it.

Truck "Barriers" in Reverse

By skilful but not especially candid advertising, long-haul trucking interests are endeavoring to persuade the public that limitations which each state has of necessity established by law on sizes and weights of motor vehicles are "barriers" to interstate commerce, which are alleged to be "Balkanizing" the United States into 48 compartments—able to carry on trade with each other only with the greatest difficulty, if at all. They even proclaim as a "barrier" non-discriminatory fees levied by many states on their own and out-of-state trucks alike, for the privilege of using the highways as a plant facility for private profit. The plea that trucks be assessed road-use fees only in the state where they are domiciled has been extraordinarily successful, despite its illogic, and has resulted in about half the states granting to trucks the same license tag "reciprocity" that is accorded to private automobiles.

Talk about highway "barriers"! License tag reciprocity is the very reverse of a barrier—being a subsidized inducement to trucks to embark upon long hauls, by offering them the use of costly roadway facilities at no use charge whatsoever. The fact is that compensatory and non-discriminatory fees for commercial use of highways are so obviously not a "barrier" to trade that to call them such is plainly disingenuous.

How much of a "barrier," then, are the state limitations on weight and size of vehicles? For traffic connected with the war production program, the states having lower minima have agreed to suspend them, so war traffic is not at issue. The legal length maxima applying to non-war traffic run from 30 ft. in Kentucky up to 65 ft. in Arizona and Idaho, with 8 ft. being the maximum width in practically all jurisdictions. Maximum permissible weights vary from 9 tons in Kentucky to 57 tons in Nevada. Here, then, is the actual freedom from "barriers" which trucks enjoy:

A truck or combination 9 tons in weight and 30 feet in length may go anywhere in the United States without hindrance from restrictions on size and weight.

A truck or combination 15 tons in weight and 40 feet long may operate in every state in the union with two exceptions.

Trucks weighing 20 tons are legal in all except six states; and there are 36 states which permit lengths 45 ft. or more.

Vehicles of such sizes are pretty big—and motorists who have to contend with them for highway space probably believe they are quite big enough. The long-haul trucking interests, however, as a political device for further maximizing the size of trucks on the highways, are proposing that the federal government rather than the states assume this regulation. This is to say that the states in which highways are built for lighter maximum loading would be forced at great expense to raise them to higher standards, just to accommodate out-of-state trucks of excessive size—the operators of which, incidentally, insist, under their claim to "reciprocity," that they themselves should pay *nothing at all* toward the added outlays thus demanded in their behalf.

The Interstate Commerce Commission estimates in its most recent annual report that 5.41 per cent of the country's freight traffic is moving by truck. In a study of truck traffic published in "Public Roads" (official organ of the Public Roads Administration) last September, it was shown that only 7.2 per cent of truck ton-miles were "trans-state" (i.e., crossing two or more state boundaries). It is only on such trans-state traffic that limitations on truck size could offer any noticeable difficulties to the operator. Calculating from the foregoing figures, it appears that *only one-third of one per cent of the country's freight traffic could possibly be interfered with by truck size restrictions, even if they were as arbitrary and unreasonable as the long-haul truckers pretend they are,* but as the actual evidence shows they are not.

The contention that the nation's commerce is being injured even to an infinitesimal degree by existing truck limitations cannot be sustained. It would, on the other hand, be easy to show that the efficient movement of commerce is being thwarted by failure of about half the states to levy compensatory fees for road use on out-of-state trucks, thereby inducing them to bid for long hauls to which their "inherent economy" does not fit them.

How Much "Functionalism"?

During the decade preceding the war there was a growing appreciation among the railroads of the necessity of modernizing their passenger stations, with the result that many obsolete structures were remodeled or replaced with new buildings of modern design. Following the war, competition will call for the resumption of this activity. A great deal of thinking is already being done in this direction, and railroad stations of the future are taking shape in the minds and on the drawing boards of architects and engineers. There are, however, some important differences of opinion concerning the lengths to which railroads should go in making their stations conform to modernistic theories of design.

In the earlier days of railroading, it was generally the practice to conform to time-tested classical lines in designing the more important stations, while the smaller structures were frequently built in accordance with designs that were governed by other considerations than a desire to use them as a means of dramatizing railroad service. But the advent of the streamlined train was the signal for the introduction of a new approach, which took its cue from the theory that railroad stations should be brought into harmony with the newer types of trains, and, therefore, should conform to modernistic or functional ideas of design. Since this concept did not have the backing of precedent or tradition, the way was immediately opened to broad differences of opinion, especially between private architects and designers on the one hand, and railroad engineering and architectural staffs on the other. In some railroad quarters it was held that designs sponsored by private firms were apt to incorporate extreme and impractical features, while the outside firms felt that railroad designs tended to be too conservative.

Based on experience to date, several fairly conclusive facts stand out. One is that private designers and architects have made important contributions to the progress that has already been made in the application of advanced thinking to the problem of railroad station design. Another is that, where such designers have been given complete liberty of action without the tempering influence of practical railroad experience or consultation with railroad engineers, their work has not been without mistakes.

A third point is that, while railroad men in general have embraced the trend toward modernization with a keen appreciation of the need for bringing railroad stations into step with the times, they have not always been able to achieve a completely impartial attitude—that is, one not influenced at least to some extent by traditional habits of thought.

There is no question that "functionalism" and other present-day concepts of station design can be carried to extremes. It is equally true that conservatism can be a retarding influence if it is permitted to dominate thinking in the drafting room. In a sense, however, the differences in opinion that have prevailed are indicative of a healthy situation, for the thought and discussion that they have provoked are certain to be reflected in a better appreciation of the problem by all concerned.

Are Crowds of Children to Romp the Right-of-Way?

No one questions the all-out co-operation of the railways in the interest of the war effort. In their capacity as the lifeline of war industries and the military forces on the home front, they have fought this war as conscientiously and doggedly as any war plant or military command, and they continue to do so. They have reoriented their plans, programs and operations time and again to meet emergencies and potential needs, both of their own volition and at the suggestion of government agencies, and they stand ready to adjust them further. This is as it should be, but in their enthusiasm to serve it is becoming evident that some on the railways should be cautioned against adopting suggestions, no matter how well intended, without weighing the consequences.

This point is raised at this time because of the plan of the Hemp division of the Commodity Credit Corporation of the War Food Administration to enlist the co-operation of the railways in organizing the school children of the country to collect milkweed floss on the right-of-way for use as a substitute for kapok in life jackets. No one questions the government agency's expressed need for 1,500,000 lb. of milkweed floss; likewise, it is unquestioned that there is a substantial amount of milkweed on railroad rights-of-way in some sections of the country; but it is to be questioned seriously whether this material should be collected on the rights-of-way by school children, unless this is done under the most competent and strict supervision.

Accidents to trespassers on the railways form one of the most serious classes of accidents with which the railways have to contend. During the last ten years an average of 2,314 trespassers have been killed and 2,309 injured annually on the railways, and not a small proportion of these have been children. This is a ratio of nearly 1 killed to 1 injured, as compared with a ratio of approximately 1 to 4 killed and injured in highway grade crossing accidents.

The railways want to aid the war effort in every way possible—even to the collection of milkweed pods on the right-of-way, if that is necessary. In fact, a number of roads have already taken steps, on the suggestion of the government agency, to refrain from mowing patches of milkweed, and are reporting the locations of these patches to local authorities. But in the light of the foregoing facts, it seems imperative that any program that will turn thousands of minors loose on the right-of-way should be approved only after the most careful study, if at all.

Santa Fe Intra-Train Radio Tests

Ultra-high frequency outfit for engine-to-caboose communication is tried out on 2,200-mile trip

Radio Telephone Being Used in the Cab of a Diesel-Electric Locomotive

AT 3:16 p. m. on June 19, when the "Spud Special," a 40-car freight train, pulled into the Corwith (Chicago) yard, the Atchison, Topeka & Santa Fe had completed a 2,200-mile test trip of end-to-end of train ultra-high-frequency radio communication, the first "trans-continental" test trip of this kind ever undertaken. The test was begun five days previously on June 14, when a train consisting of a Diesel locomotive, 68 carloads of newly-harvested potatoes, a caboose and business car No. 32, left Bakersfield, Cal.

The purpose of the trip was to make preliminary tests of end-to-end of train radio communication on a freight train in actual road service; using ultra-high frequency (more than 100 megacycles) amplitude modulation radio equipment under a wide range of physical and atmospheric conditions, such as mountains, deserts, rock cuts, tunnels, overhead power lines, bridges, rain storms, and elevations varying from nearly sea level to 7,248 ft. above sea level. On this test, various types of motive power were used, including freight Diesel-electric and several types of steam locomotives. The consist of the train also varied somewhat, as some cars were set out and others were picked up. During the trip, the total length of the train varied from 40 to 91 cars. Concerning the test, F. G. Curley, vice-president of the Santa Fe, said, "this run is only experimental, and there are many details to be worked out, but the use of radio has many possibilities in increasing the efficiency of both train and yard operations and also in easing the work of trainmen."

Equipment

The equipment use consisted of a small portable transmitter and receiver at each end of the train. On the Diesel locomotive the antenna, which was 17½-in. high, and the transmitter-receiver units were mounted on top of the locomotive, with co-axial cable connections to a remote control box on the left side of the cab. At the rear end, the transmitter-receiver units were mounted on a shelf in the dining room of the business car, with co-axial cable connections to a remote control unit in that car and to another in the caboose. The rear antenna was mounted on the roof of the business car. With the remote control units at the rear end, officers in the business car and the conductor or brakeman in the caboose could call and talk to the head end, and the head end could call and talk to anyone in either car on the rear end.

The remote control unit is a small box about 3 in. wide, 4½ in. high and 2 in. thick. Each remote control unit has a switch, a volume control, a small red indicator light, a plug socket at the top for a loudspeaker and a hook on the side for a standard telephone headset. A small loudspeaker was plugged into each remote control unit, so that the voice from the other end of the train could be heard all through the caboose or locomotive cab. This made it unnecessary to watch the red light on the remote control box to determine if someone at the other end of the train was making a call. The phone has a small spring switch on the inside of the grip. To call either end of the train from the other end, the trainman simply placed the phone to his ear, pressed the switch and talked as through conducting a normal telephone conversation. To listen, the thumb switch is released. At the receiving end, the voice is heard both over the phone and loudspeaker, so the entire crew knows what is going on.

The primary power for this equipment was obtained from a 24-volt storage battery at each end, which was charged from the 32-volt engine current and similar current on the business car. The transmitter-receiver uses about 32 watts input and the output on the air is about 5 watts.

Tests Satisfactory

At every point that crews were changed the cabooses were also changed and the remote control unit, telephone set and a loudspeaker were placed in the new caboose. This transition required about five or ten minutes. The business car remained on the train during the entire trip. The locomotives were changed less frequently than the cabooses and this change, which took about 50 min., involved removing the entire equipment on the front end and re-installing it on the new locomotive. On the steam locomotives, the radio equipment and antenna were mounted on the back of the tender with the remote control unit in the cab fastened to the end of the throttle frame, a location convenient to the left hand of the engineer. The loudspeaker was mounted overhead at the back of the cab behind the engineer.

The tests were satisfactory and the ultra-high frequency reception was clear and unaffected by rock cuts, overhead power lines, nearby lightning or the electric motors on the Diesel-electric freight locomotives. In a tunnel 700-ft. long, satisfactory communication was maintained while the locomotive was in the tunnel and the rear end of the train outside, and again with the rear end of the train in the tunnel and the locomotive

Radio Antenna and Battery Box Being Installed on the Tender of a Steam Locomotive

outside. At several yards, the engine was cut off to go to the roundhouse to be serviced, and communication was maintained with the caboose for distances up to two miles.

During the trip, there were many instances where the radio served a useful purpose and promoted operating efficiency. For example, when a hot box was reported the conductor notified the engineer, who applied the brakes, stopping the train from the head end, instead of the conductor's having to use the emergency air-release valve at the rear. This procedure permits better control of slack and better handling of cars, less damage and less possibility of pulled-out drawbars.

When heading into a siding for a passenger train, the engineer would call the conductor and ask him to let him know when the rear end was clear, permitting a stop at that point and consequent saving of the brakeman's time in getting back to the train when the switch was closed.

And, out on the main line, whenever the train stopped or slowed down, the conductor would immediately inquire what was wrong, and the reply "red board" or "yellow board," kept him fully advised. After a stop, when the rear brakeman was called back to the train from flagging, the conductor would give the engineer a verbal "high ball" when the brakeman was about 15 ft. from the caboose, and by the time slack was taken up, the brakeman would be back on board. This latter feature was a time-saver in itself, because, frequently, the front of the train is out of sight from the rear end and one of the crew would have to travel a third of the length of the train before hand signals could be seen.

In addition to the preliminary tests of train operation with the radio, the new equipment enabled operating officers to make air brake tests during the trip to learn how the brakes were taking hold and how long it took an application to reach the end of the train after being made at the head end.

The same equipment used on this test trip has also been used for communication between yardmasters and switching crews at Los Angeles, Cal., in a yard about 10 miles long. In this yard test one of the antennae was mounted on a pole 55 ft. high at one end of the yard. Satisfactory communication with switching locomotives was maintained throughout the yard for distances of as much as eight miles.

During the entire 2,200-mile test trip T. P. Brewster, superintendent of communications for the Santa Fe system, headed a party of specialists in communications

(*Continued on page 7*)

Conductor in Caboose Using Radio Telephone to Check Air Pressure in the Train Line with the Engineer

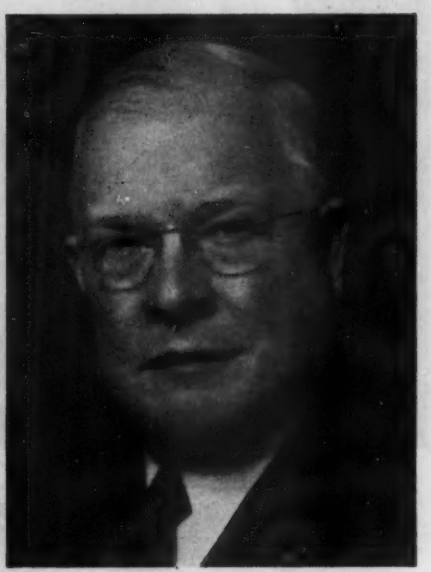
Conductor in Cupola of Caboose Using Radio Telephone to Communicate with Engineer in Locomotive Far Ahead and Around a Curve

New Heads for Reading and L. V.

Edward W. Scheer

Blank & Stoller Photo

Revelle W. Brown



Affiliated Photo-Conway

Felix R. Gerard

E. W. Scheer retires and is succeeded by R. W. Brown, with F. R. Gerard becoming new Lehigh president

UPON the retirement June 30, of Edward W. Scheer as president and director of the Reading Company, Revelle W. Brown, who since 1941 has been president of the Lehigh Valley, became chief executive of the Reading—a company he had previously served for six years as vice-president in charge of operation and maintenance, in which post he also succeeded Mr. Scheer, when the latter became head of the Reading, in 1935. Felix W. Gerard, Lehigh Valley vice-president in charge of operation and maintenance, has been elected to the presidency of that road, succeeding Mr. Brown.

Mr. Scheer, who had for some time desired to retire to his home in Maryland, has been president of the Reading for nine years. During his administration the company's traffic and earnings rose from the depths of the depression to the highest gross revenues of any year in its history. In accepting his resignation, the board of directors observed that his association with the company had begun "during the onslaught of the disastrous economic disturbance which prevailed in the 1930's," necessitating on his part "great courage and resourcefulness, combined with mature experience and balanced judgment, to chart the course which brought this company so successfully through that trying period."

Mr. Scheer had been a railroad man for 55 years. Born at Zaleski, Ohio, April 28, 1875, he began work at the age of 14 as a messenger boy in the car department of the Cincinnati, Washington & Baltimore (an integral part of the B. & O.). He advanced steadily through various positions in the operating department until he became general manager of the B. & O.'s Eastern Lines, at Baltimore. From 1932 to 1935 he served as vice-president of the Reading Company, and from 1933 to 1935, also as vice-president, Central of New Jersey. On December 27, 1935, he became president and director of the Reading, and from 1935 to 1940 he was president and director also of the Central of New Jersey, in 1940 being named chief executive officer of the latter road, which post he relinquished in 1943. A member of the board of directors of the Association of American Railroads, Mr. Scheer is also a veteran of the Spanish-American War.

Revelle Brown was born August 5, 1883, at Carlyle, Ill., attended public schools and high school, and entered railroad service July 19, 1901, on the Illinois division of the Baltimore & Ohio. Fifteen months after starting out as a laborer, he became a fireman, and on November 26, 1905, was advanced to locomotive engineer. His name still heads the seniority list on the Illinois division. In 1910, he was an air-brake instructor for the B. & O. in Cincinnati; in 1912, road foreman of engines, Indianapolis division, under R. B. White. There followed several advancements in motive power work, and on June 1, 1915, he was named trainmaster, Wellston division. Later, he served in that capacity on the Toledo division. He received promotion to assistant superintendent, Ohio division, in 1917, and two years later was named superintendent. He served the Connellsville and Cumberland divisions also as superintendent and, in 1926, was appointed general superintendent of the Maryland district. In 1930, he became general manager, Central Railroad of New Jersey, at New York, six months later assuming the position of vice-president and general manager. Mr. Brown was elected vice-president in charge of operation and maintenance, Reading Company and C. N. J., in 1935, succeeding Mr. Scheer. He held this

position until 1941 when he resigned to become head of the Lehigh Valley.

Chairman at various times of committees representing the eastern railroads in negotiations with railroad labor organizations, Mr. Brown is now chairman of the Committee on Public Relations of the Eastern Railroads Presidents' Conference. He was one of those to testify for the side of management in the operating-wage negotiations held in New York in June and July, 1943. He asserted at that time he had always believed in "reasonable" wages for those engaged in railroading, but suggested that all so employed should do their "reasonable part in maintaining the railroad machine." He added he did not think any wages "reasonable" when raised "to such an extent that they will destroy the property of those whose money is invested in the railroad machine which we operate." The opposition did not challenge Mr. Brown's testimony, and he later remarked that "of course, they wouldn't want to question me—I'm one of them."

Mr. Brown numbers among his memberships the New York Railroad Club, Traffic Club of New York, the Railroad-Machinery Club of New York, Philadelphia Chamber of Commerce, Pennsylvania State Chamber of Commerce and the Chamber of Commerce of the United States. His headquarters will be in Philadelphia.

Felix Gerard, with 41 years in railroading, was born at Blairsville, Pa., August 30, 1887, and was educated in the public and high schools of that community. He entered railway service in May, 1903, as a clerk with the Pennsylvania. In 1906, he entered the operating department as a trainman, remaining in train service until 1920, when he was named assistant trainmaster. In 1926, he became trainmaster, and was advanced to passenger trainmaster in 1927. He was appointed superintendent of the Long Island in 1928, returning to the Pennsylvania as superintendent of the Philadelphia division, in 1932. He was appointed general superintendent of the Northwestern division of the Pennsylvania, in 1936, with headquarters in Chicago.

Mr. Gerard went with the Lehigh Valley as general manager in January, 1942, being named vice-president and general manager four months later. He was recently advanced to vice-president, operation and maintenance, which position he has held until his election to the presidency. He became a director in 1942.

Mr. Gerard is a member of the Western Railway Club, Chicago Traffic Club, Railroad-Machinery Club of New York and New York Railroad Club.

Santa Fe Intra-Train Radio Tests

(*Continued from page 5*)

aboard the train. With him were R. B. Moon, west coast manager of the Bendix Radio Division, Bendix Aviation Corporation, manufacturers of the equipment; L. R. Thomas, electronics engineer for the Santa Fe, and two Bendix installation engineers, C. D. Carter and H. A. Varley. At various points along the line, railroad officers joined the train to observe the tests.

Concerning the tests, Mr. Moon said, "It has been a generally accepted belief that communication employing ultra-high frequency transmission and reception such as provided by this equipment was possible only between points within line of sight of each other and unobstructed by any larger objects. However, it has developed during the tests conducted on this trip that direct line of sigiht is not necessary for communication over relatively short distances, since the antennae on the engine and caboose were obstructed in some manner at least 50 per cent of the time by deep cuts, curves around mountains, large metallic structures, etc."

The results of this test will be made available to the Telegraph and Telephone Section of the Association of American Railroads. This work was done by the Santa Fe under an experimental license by the Federal Communications Commission.

Fascism in the Costume of Democracy

"The significance [of the Montgomery Ward] affair is that our left-wingers view the failure of the management to yield 'unconditionally' to the order of the President as an act of rebellion. And the fact is that in such a view there is expressed one of those fundamental slants that pave the way for the coming of 'fascism.' It is ironical that it is among the most impassioned shouters for 'democracy' that this slant should make its appearance, but it is not the least paradoxical for the fact is 'fascism' is about the commonest form of 'degeneration' in the case of a 'democracy,' and all 'democracies' are at all times threatened with degeneration.

"'Fascism' is protean in its surface manifestations, but under them all lies one fundamental characteristic, a denial of *law as a principle*, whereas it is recognition of law as a principle, that is the very foundation stone of 'democracy' proper. Here comes in the distinction between the two elements of civil government—'authority' and 'power.' Democracy proper possesses both authority and power, its authority representing fixed principles of law and the power necessary to enforce them. Fascism possesses power without authority.

"A democracy is ripening for transformation into fascism when its respect for fixed principles of law begins to weaken. The most important of the principles of law under any form of government are those which set limits to the authority of the civil power over the person, and it is here that the degenerative process first shows itself in the form of encroachment by the state upon the citizen [italics supplied].

"When this encroachment reaches the point where a community still in form 'democratic' recognizes no restriction upon the State's authority over the person, all real distinction between 'democracy' and 'fascism' disappears. Moreover, the tendency for the democratic form then to transmute itself to the single-party state with an omnipotent leader is almost irresistible.

"The significance of the Ward episode is that it furnishes another symptom of the presence of the virus of this degeneration in our entire left-wing body of opinion which presses continuously for extension of the state's authority over the citizen. If there is anyone who thinks that this statement is not true, or is even overdrawn let him ask himself where he sees in left-wing opinion any clear evidence that it recognizes any restriction of the state's authority over the citizen, when that authority is backed by a majority vote of the citizens themselves. One section of that opinion formally and even contemptuously denies the very notion itself. Another less frank (and perhaps less courageous) contents itself with denial by implication while burning much incense at democracy's altar. The bottom intellectual stratum . . . confines itself to vociferous demands for each 'encroachment' as it is proposed and does it in the name of 'democracy' and war on 'fascism.'"

Thomas F. Woodlock in the Wall Street Journal

Control of Boiler Water Chemicals

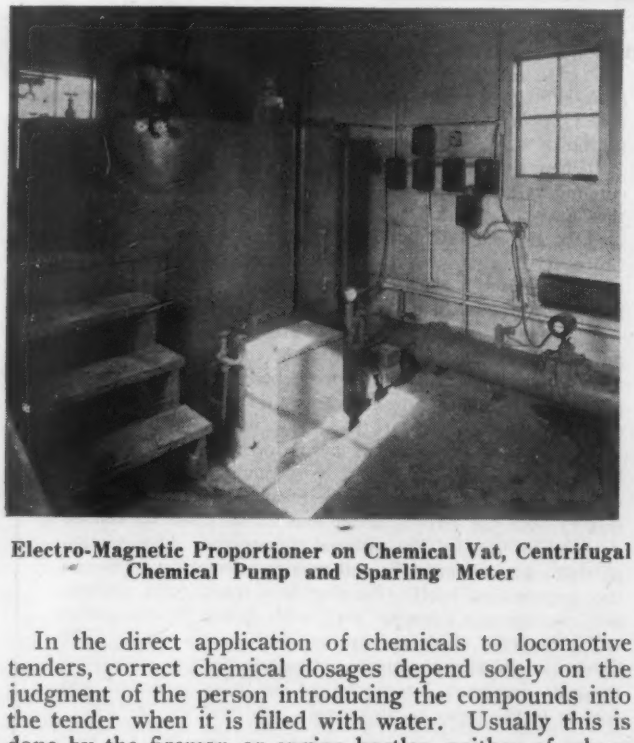
Many proportioning devices available to provide accuracy in chemical solutions utilized in wayside softening of water for use in boilers

IN its full sense, the term "wayside" does not apply to any particular treating process, but is generally accepted to indicate several types of partial or incomplete treatment for locomotive boiler feed water supplies, the most extensive application being for the conversion of non-carbonate scale-forming mineral to non-scale-forming matter.

The direct application of soda ash in locomotive tenders could be called the forerunner of these types of treatment, but this method in its early days was haphazard and inaccurate. Later, when study and experiment determined the chemical dosages necessary to overcome certain water impurities, feeding equipment was produced to proportion correct quantities of chemical solutions and to introduce them as required to water being delivered into storage or track tanks, rather than into the locomotive tenders. From this early start, developments in chemical compounds and types of feeding equipment have progressed extensively.

Popular Methods of Application

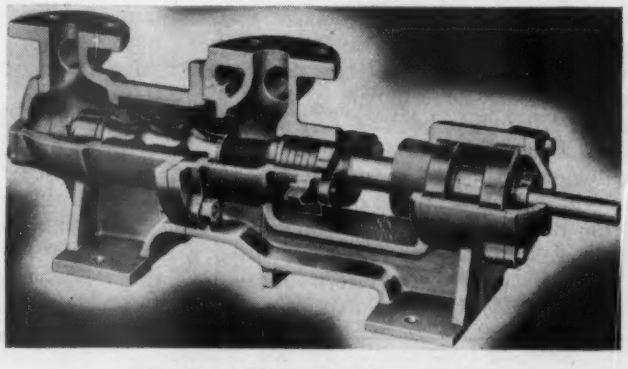
The methods of applying chemicals for "wayside" treatment in popular use today may be grouped into three general classifications: (1) Direct application to locomotive tenders; (2) "by-pass" chemical feeders; and (3) chemical solution feeders.



Electro-Magnetic Proportioner on Chemical Vat, Centrifugal Chemical Pump and Sparling Meter

In the direct application of chemicals to locomotive tenders, correct chemical dosages depend solely on the judgment of the person introducing the compounds into the tender when it is filled with water. Usually this is done by the fireman or engine hostler, neither of whom normally appreciates the necessity for accurate proportioning between the water and the chemicals. This method of treatment is rapidly being replaced by other more accurate methods, although it does have the advantage of economy, particularly on branch lines where water consumption is low. In these instances, the installation of permanent treating plant facilities, with requisite attendance, would make the cost of treatment prohibitive. This method requires constant policing and supervision to obtain satisfactory results.

A "by-pass" feeder consists of a small chemical drum, through which a portion of the water being introduced to the storage tank is diverted to pick up or absorb sufficient chemicals for treating the entire quantity of water in the storage tank. The chemicals used are usually compressed in dry balls or bricks for ease in handling and uniformity in rate of solution, a certain number being applied to the chemical tank at specific intervals to treat a predetermined quantity of water normally expected to be consumed during the period before the next application is made.



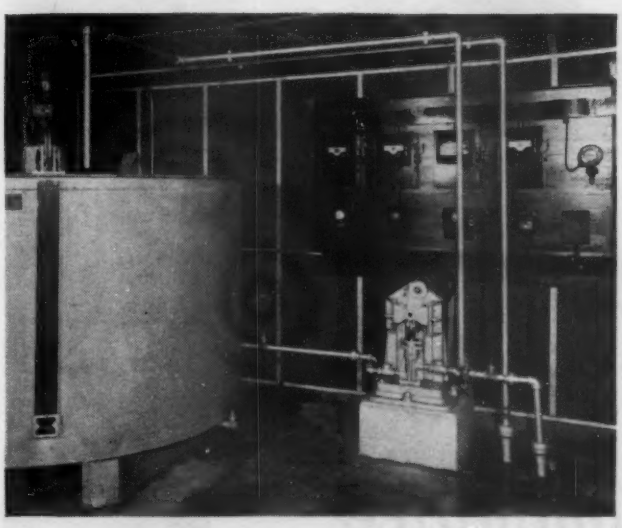
Sectional View of a Moyno Pump

Chemical Solution Feeders

Unless the quantities of water used by locomotives are uniform between periods of charging the chemical tank, over-treatment or under-treatment will result. Accuracy of treatment is difficult to control because dependence must be placed on adjustment of the by-pass valve openings and the possible variation in rate of water flowing to the storage tank.

Chemical-solution feeders enjoy the widest use for wayside treatment, since the many variations in available designs and types provide equipment for almost any possible application. Basically, this type of treating equipment consists of a small chemical vat into which either liquid or powdered chemicals are introduced with water, and mixed or agitated into a solution preparatory

This article is an abstract of a report made by a subcommittee, of which K. J. Wier was chairman, of the Committee on Water Service, Fire Protection and Sanitation, to the annual meeting of the American Railway Engineering Association on March 16.



Piston-Type Chemical Pump, Chemical Vat and Control Equipment

to application with the raw water to be treated. In some instances this solution is fed, without pumping equipment, to the suction side of the raw water pump, treatment control being maintained by using orifice plates in the chemical solution line; but the most widely used method is to pump the solution directly to the point of application, which may be the raw water pump discharge line, the storage tank, the water column or the tank spout. The great difference between the types of chemical solution feeders is in the pumping equipment, the proportioning devices, and the controls.

Chemical Pumps Are of Several Types

Several types of chemical pumps are available, namely (1) centrifugal, (2) diaphragm, (3) rotary, (4) piston and (5) Moyno. The centrifugal pump is not dependable for uniform-quantity feeding because of variable deliveries with fluctuating discharge heads, and in small sizes is not adaptable for pumping certain types of heavy chemical solutions. The diaphragm and rotary pumps have not been accepted widely. The piston and Moyno pumps, both of which are of the positive displacement type, are used most widely for pumping chemicals.

The Moyno pump is a development of the Moyneaux (French) pump and consists essentially of a rubber stator molded so that its integral surface is in the form of a double-threaded helix, and an alloy metal rotor made in the form of a single-threaded helix which meshes with the stator. Rotation of the rotor causes a positive endwise displacement of the solution trapped in the voids between the double-threaded stator and the single-threaded rotor.

The rolling action of the rotor in the stator is conducive to long life for these parts, compared with the straight rubbing action of the piston type pump.

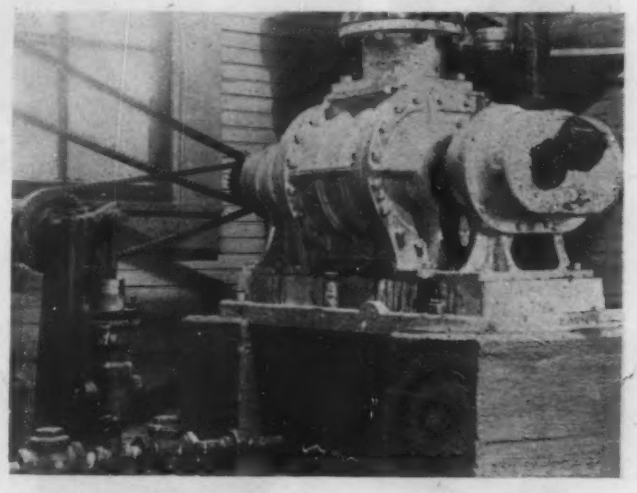
Control equipment for proportioning chemical solutions accurately with uniform or variable flows of water is offered in variety. With relatively uniform water flow rates, chemical solutions can be pumped directly from the vats, the pumps being controlled by (1) flow switches actuated by the movement of water through raw water pipelines, (2) synchronizing them with raw water pumps, or (3) electric switches operated by the movement of tank or water-column valve mechanisms. Further adaptations for chemical feeding with uniform water-flow rates include chemical pumping equipment actuated by means of levers, pulleys, belts, chains, etc., directly connected to reciprocating or centrifugal raw water pumps, thus avoiding additional motive power for the chemical pumps.

When Raw-Water Flow Is Variable

For variable raw-water flow rates, the two basic types of control equipment include the water motor and the velocity propeller-type meter equipped with a mercoid contact box. The water motor utilizes water passing through the motor as power to operate the chemical pump, either through a belt or a chain drive arrangement. The speed of the water motor is in proportion to the rate of flow of water through it, thus insuring accurate proportioning and feeding of the chemical solution.

Velocity propeller meters require a flow of less than 0.5 cu. ft. per sec. through an 8-in. or larger meter, to overcome friction and inertia to bring the meter to full registration. Above this rate, the propeller practically floats in the stream and is responsive to the slightest change in velocity. These meters are constructed of the tube or saddle type, can be used in horizontal, vertical, or slanting positions; are guaranteed accurate within two per cent; and the pressure loss through them is less than through any other meter of comparable range and accuracy. The mercoid contact box is mounted on top of the meter and furnishes the impulses for the operation of the chemical pumping equipment. This permits a "slug" treatment with a specified quantity of water, or a uniform flow of chemical solution when an electrically-operated proportioner is used in conjunction with the meter. The proportioner also provides for automatic shut-off when the supply of the solution is exhausted, a safeguard against operating chemical pumps dry.

A liquid-piston, air-operated pumping device is also available for pumping chemicals. This mechanism utilizes compressed air as an actuating medium, together with an electrically-operated proportioner, float chambers, solenoid valves, etc. It is characterized by simplicity, and an absence of working parts and packing for efficient operation, which is a distinct advantage.



A Cycloidal Water Motor

Additional control and proportioner devices, both simple and complex, practical and of little value, are available for modifications of the usual types of wayside treating plant equipment.

General Committee Mechanical Division, A. A. R.

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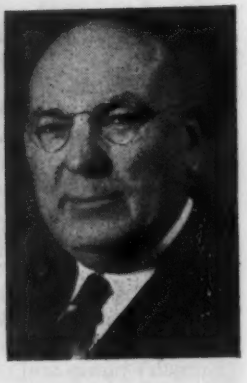

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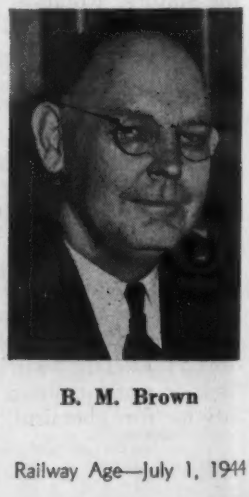
Mechanical Engineer



B. M. Brown

Mechanical Division Committee Reports Adopted

General Committee acts favorably on reports of 13 standing committees submitted at a St. Louis meeting

AS announced in the *Railway Age* of June 17, plans for an annual member meeting of the A. A. R. Mechanical Division on June 23 and 24 at the Hotel Jefferson, St. Louis, Mo., were canceled at the request of the Office of Defense Transportation. It was originally decided simply to postpone the meeting in the hope that conditions might permit calling this important gathering of railway mechanical department officers at some later date in 1944.

Uncertainty regarding the feasibility of this plan, and particularly the need for prompt action on a considerable number of committee recommendations bearing directly on more efficient equipment maintenance and use under war conditions, resulted in a final decision to give up all idea of a member meeting of the Division this year and, in lieu thereof, to have the committee reports formally passed on and released promptly by the General Committee.

To accomplish this objective, the General Committee held its meeting on June 22 at St. Louis, as scheduled, for the consideration of the regular docket of Mechanical Division business, and extended the meeting to the next day, June 23, when committee chairmen were invited to be present and submit their reports. Abstracts of the 13 committee reports and the action taken regarding each are included in the following pages.

Report on Prices for Labor and Materials

Material prices, rechecked March 1, 1944, show slight upward trend—Labor rates of February 1, 1944, stand

Moffett Studio

A. E. Smith,
Chairman

In order that the rules may currently provide an equitable basis for inter-road billing, your committee has continued the work of analyzing material, labor and new equipment costs in A. A. R. Interchange Rules 101, 107, 111, and 112 of the Freight Car Code, and Rules 21 and 22 of the Passenger Car Code, with a view to determining and recommending necessary changes to be made in the next supplement to the current code.

Rule 101

All miscellaneous material prices in Rule 101 were rechecked as of March 1, 1944, quotations submitted by the purchasing agents of the ten selected railroads, representing thirty-nine per cent of total freight-car ownership in the United States and Canada, showing a slight upward trend in material markets as indicated by detail recommendations for revisions shown under this rule.

Item 253-D of Section II covering non-approved Friction Draft Gears is modified to include the Miner A-19-SF gear. Also, the first paragraph of the note covering Friction Draft Gears on page 198 of the 1944 Code is modified to provide an equitable means of credit allowance where such gears are removed with broken or cracked casing.

A new table of arbitrary weights for five types of coupler yokes most commonly used has been set up in this rule, to facilitate preparation of and checking bills for freight-car repairs.

Rule 107

Item 32 covering tank outlet-valve-chamber cap is modified to include labor allowance for application of gasket other than rubber. The item is also clarified to indicate that cap reapplication charge can only be made on authority of a defect card and when the cap is found hanging by a chain.

A new second paragraph is added to Item 108-A to provide allowances for lining or ceiling where nails are set but holes not puttied.

Item 256 is modified and new Item 256-A added, to provide for application of truck springs in National type B or B-1 trucks.

The semi-annual review of labor rates as of October 1, 1943, disclosed that due to decrease in proportion of helpers and apprentices to mechanics, an increase in the A. A. R. labor rate from actual of $1.4187 (called $1.40) to $1.4374 (called $1.45) was in order. As a decision with respect to wage increases for non-operating employes was anticipated your committee decided to make no change in the labor rate effective January 1, 1944; but immediately the decision was announced all labor rates and allowances were reviewed, including combination labor and material items, and revised rates and allowances were made effective February 1, 1944, in Supplement No. 1 to the current Code.

Rule 111

New Item 15-A is added, to provide allowance for periodic attention to AB-1-B freight-brake equipment.

Rule 112

Because of the small number of box, hopper, gondola and covered hopper cars constructed during 1943, and because no refrigerator cars were reported built during the year in the

United States, no change in settlement prices for any of these types of freight-train cars is recommended.

Based on the cost of 452 tank cars constructed during 1943, recommendations are made in this rule with respect to reproduction pound prices for new tank cars of all classes, in order that the supplement of August 1, 1944, may reflect 1943 costs in lieu of the figures shown in the present Code.

Passenger-Car Rule 21

No modifications are recommended in this rule.

Passenger-Car Rule 22

Material prices were rechecked on the basis of quotations as of March 1, 1944, showing small changes in a few items as indicated by detail recommendations for revisions appearing under this rule. Aside from these price changes, no modifications are recommended in this rule.

It is the intent of the committee to investigate labor and material costs again in October and if sufficient change develops, necessary revisions will be made and inserted in the Rules effective January 1, 1945.

The report was signed by A. E. Smith (chairman), vice-president, Union Tank Car Co.; J. D. Rezner (vice-chairman), superintendent car department, Chicago, Burlington & Quincy; P. Kass, superintendent car department, Chicago, Rock Island & Pacific; T. J. Boring, general foreman, Pennsylvania; H. H. Boyd, assistant chief motive power and rolling stock, Canadian Pacific; A. H. Gaebler, superintendent car department, General American Transportation Corp.; and, G. J. Flanagan, general car inspector, New York Central.

The report was accepted.

Report of the Arbitration Committee

Minor rule changes suggested—Effective dates extended for required changes to freight cars

J. P. Morris,
Chairman

During the year Cases 1799 to 1802, inclusive, have been decided and copies forwarded to the members.

With the concurrence of the Committee on Couplers and Draft Gears, it is recommended that effective dates of Rule 3 requirements prohibiting acceptance from owners of cars equipped with 5-in. by 5-in. couplers and prohibiting the interchange of cars equipped with Type E bottom rotary operated couplers having separate lock-lift lever and toggle be extended to January 1, 1946.

A new third paragraph is recommended for addition to Rule 16 to provide stenciling to indicate special protective coatings applied to the inside of tank cars, as a means of avoiding unnecessary damage when entering tanks for inspection or repairs, and in connection with steaming and cleaning operations; also to establish responsibility for damage to such coatings.

Based on satisfactory tests, upon recommendation by the Committee on Couplers and Draft Gears, it is recommended that the Emergency Welding and Limitations section of Rule 23 be modified to permit welding of transverse and shrinkage cracks in the shanks of couplers, from the rear end of the shank to and including the back wall of the horn.

Modification of Rule 94 is recommended, to limit bills on authority of defect cards, in cases where car owner elects to dismantle instead of repair the cars, to A.A.R. depreciated value of car less salvage, in order to harmonize with similar provision appearing in Rule 112.

Modifications are recommended in Rule 98 to provide for marking of one-wear wrought-steel wheels which are turned account built-up metal or out-of-round, and to establish charges and credits.

Recommendation is offered for a modification of Rule 122, to provide a method for handling shipments of material ordered from car owner for repairs to his cars, effecting settlement of transportation charges, which should reduce billing and correspondence details.

No modifications included in its report necessitate submission to letter ballot.

All recommendations for changes in the Rules of Interchange submitted by members, railroad clubs, private car owners, etc., have been carefully considered by the committee and where approved, changes have been recommended.

Attention is again directed to the fact that the Arbitration Committee will not consider questions under the Rules of Interchange unless submitted in the form of Arbitration Cases as per Rule 123.

Rule 2

The committee recommends that the second paragraph of this rule be modified, effective August 1, 1944, as follows:

Proposed Form: Empty cars offered in interchange must be accepted, provided they conform to the requirements of Rule 3 and are in safe condition for movement, the receiving road to be the judge.

Reason: To prevent delays now being incurred in movement of bad-order cars to home shops for repairs. This recommendation has the concurrence of the Operating-Transportation Division.

Freight Rule 3

The committee recommends that effective dates for various requirements in the present rule, as listed below, now set at January 1, 1945, be extended to January 1, 1946:

Section (b), Paragraph (7)—Brake levers: metal badge plates.

Section (b), Paragraph (9)—Braking power: braking ratio.

Section (c), Paragraph (10)—Couplers having 5-in. by 5-in. shanks.

Section (c), Paragraph (11)—Couplers having 5-in. by 7-in. shanks.

Section (c), Paragraph (12)—Couplers, bottom rotary operated, not equipped with assembled riveted type lock lift lever and toggle.

Section (t), Paragraph (3)—Application of welded T or L section truck sides.

Section (t), Paragraph (10)—Tank cars; metal placard holders.

Section (u), Paragraph (4)—Class E-3 cars not to be accepted from owner.

The matter of extension in effective dates for requirements involving AB brakes and bottom-rod and brake-beam safety supports has been referred to the General Committee.

The committee recommended a modification in Section (h-3) to provide for the recommendation in the report of the Committee on Geared Hand Brakes with respect to the requirement of approved hand brakes on cars built new or rebuilt on or after January 1, 1945. This revision in final form will be issued later.

Rule 9

The Committee recommends that the third requirement opposite the item "General" in this rule be modified, effective August 1, 1944, as follows:

Proposed Form: Feet of lumber. Note: When flooring, side planks or end planks are applied, show symbol M to indicate matched lumber, or symbol SE if straight edge lumber is applied.

Reason: This information is necessary in order to compute board foot measure under Rule 102.

Rule 16

The Committee recommends that a new third paragraph be added to this rule, effective August 1, 1944, to read as follows:

Proposed Form: When special protective coatings are applied to the inside of tanks of tank cars, tank should be stenciled showing kind of coating and date (month and year) of application. If a destroyed or badly damaged car is not so stenciled, settlement on depreciated-value basis in accordance with note under Paragraph 8, Section B of Rule 112 will not apply. To protect these special coatings, stenciling at least 2 in. in height may be applied on sides of dome, or on sides of tank near ladders, such as "Do Not Put Steam or Boiling Water in This Tank," or such other caution as may be necessary to protect the coating. If, in connection with steaming, cleaning or entering tank for inspection or repairs, the coating is damaged and the car does not carry such caution stenciling, any damage to protective coating will be car owner's responsibility.

Reason: To avoid unnecessary damage to special protective linings in tanks of tank cars.

Rule 17

The Committee recommends that reference in Remarks column for Items 26, 28 and 30 of the table in Paragraph (c-2) of this rule be modified, effective August 1, 1944, as follows:

Proposed Form: 26. No charge if applied to or with Type E coupler. If Type D-9 knuckle is removed, average credit shown in Rule 101 must be allowed.

28. No charge if applied to or with Type E coupler. If Type D-9 or D-11 knuckle is removed, average credit shown in Rule 101 must be allowed.

30. No charge if applied to or with Type E coupler. If Type E-9 knuckle is removed in good condition, secondhand credit must be allowed. If Type D-9 knuckle is removed, average credit shown in Rule 101 must be allowed.

Reason: To harmonize with Rules 101 and 104.

Rule 19

The Committee recommends the effective date of Item 14 of this rule, prohibiting the application of welded cast-steel truck side frames having T- or L-section compression or tension members, now set at January 1, 1945, to be extended to January 1, 1946.

Reason: To harmonize with extension recommended under Rule 3.

The committee recommends that a new item be added to this rule (which specifies materials that must not be used in making repairs to foreign cars), to read as follows:

20. Separate bottom rotary operation toggles and lock lifters of Type E couplers.

Reason: Application of the assembled unit type of lock lift lever and toggle (having the parts riveted together) is specified under Rule 18. Therefore, application of the separate toggles and lock lifters to foreign cars should be prohibited.

The Committee recommends that a new last item be added to this rule (which specifies materials that must not be used in making repairs to foreign cars), to read as follows:

Proposed Form: Pipe unions in hand rails of tank cars.

Reason: The use of pipe unions for this purpose is not permitted.

Rule 23

The Committee recommends effective date of the requirement prohibiting the welding of cast-steel truck side frames having T- or L-section compression or tension members, now set at January 1, 1945, be extended to January 1, 1946.

Reason: To harmonize with extension recommended under Rule 3.

The Committee recommends that paragraph (c-1) of the Emergency Welding Regulations and Limitations Section of this rule be modified, effective August 1, 1944, as follows:

Proposed Form: (c-1) Transverse cracks, including shrinkage cracks in the shank of the coupler from the rear end of the shank to and including the back wall of the horn, may be welded. There is no limitation in the length or depth of cracks that may be welded.

Reason: To conserve critical material; as recommended by the Committee on Couplers and Draft Gears.

Rule 23

The committee recommends that a new sub-section be added to Section C of this rule, effective August 1, 1944, to follow Fig. E-1 on page 98 of the current code, to read as follows:

Conversion of 6½-in. to 9⅛-in. butt couplers—(c-4) Couplers having 5-in. by 7-in. shank with 6½-in. butt may be converted to 9⅛-in. butt by welding metal shims on top and bottom of butts in accordance with the following regulations:

1—Shims should be cut to proper size—1$\frac{5}{16}$ in. by 5 in. by 5½ in.

2—Drill shims in pairs to match holes in related coupler butts.

3—Grind coupler butts to give neat seating of shims.

4—Bevel shims ⅜ in. at 60-deg. angle (or give J-weld preparation) all around contact face. No beveling of coupler butt permitted.

5—Tighten shims to welding position on coupler butt by dummy pin and key, and exercise care to see that shim edges are flush with corresponding edges of coupler butt.

6—After shims are thus in position, weld to coupler butt by the shielded-arc electric method.

7—All sharp corners of applied shims must be removed by grinding. (See sketch following, designated as Fig. E-3.)

Reason: To conserve critical material; as recommended by the Committee on Couplers and Draft Gears.

Rule 44

The committee recommends that a new sentence be added to present Note B following Section (4) of this rule, effective August 1, 1944, as follows:

Proposed Form: Note B.—The bending of steel center sills in excess of 2½ in. does not refer to sagging or bowing, but to definite buckling or abrupt bends. The term "between bolsters" means from rear edge of body bolster at one end of car to rear edge of body bolster at opposite end of car. Where both center sills are bent vertically or horizontally between body bolsters and bending is accompanied by definite buckling or abrupt bends, the damage shall be considered as being in excess of Paragraph 4(b) if the total deflection in each sill is in excess of 2½ in. measured vertically or horizontally between two adjacent crossbearers or between body bolster and first crossbearer.

Reason: To clarify the intent as to method of measurement for buckled sills.

Rule 60

The committee recommends that Note 3 following Section (1) of this rule be modified to eliminate reference to brake-pipe strainer, effective August 1, 1944. (No change in list of approved parts except item of Brake Pipe Strainer is eliminated.)

Reason: As recommended by the Committee on Brakes and Brake Equipment, account former objectionable types of strainers now out of service.

Rule 66

The Committee recommends that Item 4 in Section (j) of this rule be modified, effective August 1, 1944, as follows:

Proposed Form: (j) Journal bearings shall be considered as requiring renewal:

4. When lining is worn through to brass either at crown or side.

Reason: To clearly indicate this provision is not applicable to bearings having the lining worn through at the fillet end only, as recommended by the Committee on Lubrication of Cars and Locomotives.

Rule 82

The Committee recommends that first paragraph of this rule be modified as follows:

Proposed Form: Rule 82. Cast-iron, cast-steel or 1-W wrought-steel wheels which take remount gauges shown in Figs. 7 and 8; and cast-iron or cast-steel wheels which take tread worn hollow limit for gauges for remounting shown in Fig. 8-A; and cast-iron or cast-steel wheels with tread defects as follows (a, b, c and

d); shall be classed as scrap, except as otherwise provided for 1-W wrought-steel wheels in Paragraph (i-2) of Rule 98. These gauges or the following remount limits (a, b, c and d), must not be used for condemning wheels under cars. Wheels which do not take the remount gauges, or which have not reached the defect limits specified below (a, b, c and d), shall be classed as secondhand.

Reason: To clarify the intent with respect to 1-W wrought-steel wheels.

Rule 94

The Committee recommends that the last paragraph of this rule be modified, effective August 1, 1944, as follows:

Proposed Form: If the owner elects to dismantle the body or trucks, or both, charge may be made for such material, the renewal of which would have been required for the repairs covered by the defect card, but such charge to be confined to the actual material stated on card. Also, in case of items damaged which could have been repaired, labor charge may be made for such items on basis of labor for straightening or repairing same, but no labor charge is permitted for the R. and R. of any part and no other labor shall be charged in such cases except insofar as labor is already included in the A.A.R. prices for material.

However, under any of these circumstances bill on authority of defect card may not exceed the A.A.R. depreciated value of car, less salvage.

Reason: Responsibility of road issuing defect card should not exceed the depreciated value of car less salvage.

Rule 98

The Committee recommends that Paragraph (c-1) of this rule be modified, as follows:

Proposed Form: (c) (1) On basis of Rule 82, cast-iron, cast-steel, or 1-W wrought-steel wheels (except as otherwise provided as Paragraph i-2), when condemned by remount or other remount limits applicable, shall be credited as scrap when removed from service; responsibility for same being governed by responsibility for defective mate wheel. If mate wheel is not defective, the responsibility for wheel condemned by remount gauge or other remount limits, will be governed by responsibility for defective axle on which mounted. In such case when wheel is condemned by remount gauge or other remount limits, the specific cause for so condemning shall be stated on billing repair card. Wheels condemned by remount gauge or other remount limits must not be applied to foreign cars. Remount gauge or other remount limits must not be used for condemning wheels under cars.

Reason: To clarify the intent with respect to 1-W wrought-steel wheels.

The Committee recommends that Paragraphs (1) and (5) of Section (i) of this rule be modified, effective August 1, 1944, as follows:

Proposed Form: (i) (1) Charges and credits for one-wear wrought-steel wheels shall be on basis of prices new, secondhand and scrap, as per Items 194-C and 194-D of Rule 101; except that in cases of such wheels condemned for any defect, which can be reclaimed by turning as specified in the following paragraphs, charges and credits shall be on basis of service metal in the tread above the ¾-in. condemning limit, as measured by the leg of the A.A.R. steel wheel gauge without deducting the finger reading, plus the scrap value of metal inside the condemning limit as specified in Rule 101, but in no case to exceed secondhand value of the wheels. Price for such service metal shall be $1.52 per sixteenth inch for wheels 50-ton or less and $1.65 per sixteenth inch for 70-ton wheels. When crediting such wheels removed 0.7 hours labor per wheel should be deducted to cover the cost of turning.

Note.—In all cases of such wheels removed and condemned for any defect, the over-all thickness of tread before turning must be shown for each wheel at top of wheel and axle billing repair card, and also show in the "after turning" column the sixteenths of service metal (remaining after turning) measured as prescribed above. For each wheel applied which has been reclaimed by turning, the sixteenths of service metal measured as prescribed above must be shown in the "after turning" column.

5. The one-wear wrought-steel wheel is identified by marking "1-W" on back of flange near wheel number or manufacturer's name. When such wheels are turned as specified in Paragraphs (2), (3) and (4), or on account of being slid flat, the letter T (½ in. in height) must be legibly stamped on the wheel following the identification mark "AAR-1W" on back face of the rim; this "1-WT" marking to be shown on repair records for such wheels when applied or removed. Wheels reclaimed by grinding must not be stamped "1-WT."

Reason: To clarify the intent with respect to one-wear wrought-steel wheels condemned account out-of-round, built-up tread and slid flat, which can be reclaimed by turning.

Rule 101

The committee recommends that Item 58-B and note following be eliminated from this rule, effective August 1, 1944.

Reason: As recommended by the Committee on Brakes and Brake Equipment, account former objectionable types of strainers now out of service.

Rule 111

The Committee recommends that Sub-Item (9) of Paragraph (b) under Item 15 be eliminated from this rule, effective August 1, 1944.

Reason: As recommended by the Committee on Brakes and Brake Equipment, account former objectionable types of strainers now out of service.

Rule 112

The Committee recommends that note under Paragraph 8 of Section B of this rule be modified, effective August 1, 1944, as follows:

Proposed Form: Note: Settlement for special protective coatings applied to inside of tanks of tank cars for which per pound reproduction prices are specified, providing tank is stenciled showing kind of coating and date (month and year) of application, shall be additional and on basis of reproduction cost depreciated from date of application at two per cent per month on straight line basis, subject to a depreciation limit of 90 per cent. The same method shall be used in settling for cost of renewal of such coatings, if necessary, in a damaged tank that is repaired.

Reason: To provide equitable settlement for renewal of special protective coatings on inside of tanks of tank cars which are repaired.

Rule 122

The committee recommends that first and second paragraphs of this rule be modified and Interpretation No. 3 eliminated, effective in the next supplement, as follows:

Proposed Form: Rule 122. Companies shall furnish to each other, upon requisition, materials for repairs of their cars on foreign lines. The material must be forwarded promptly by freight or express, charges prepaid from point of shipment in cases of car owner's defects. In cases of handling line defects, the material should be forwarded with transportation charges collect, in which event the repairing line may reclaim only for that portion of the movement over its line.

Requisitions for such material shall specify that same is for repairs of cars, giving car number and initial of such car, together with pattern number, sketch or other data to enable correct filling of requisition, also responsibility for the repairs.

Interpretation (3) (Vacant.)

Reason: To reduce correspondence and eliminate rendering bills covering transportation charges on material furnished by car owners for repairs to their cars on foreign lines.

Passenger Rule 2

The committee recommends that the effective date of Paragraph (e) of this rule, with reference to equipping all-steel or steel underframe cars with cardboards or suitable receptacles for accommodation of defect and joint evidence cards; and also effective date of Paragraph (f) covering the application of brake shoe spark shields to passenger train cars having underneath exposed wood parts over the wheels, both requirements now being set at January 1, 1945, be extended to January 1, 1946.

Reason: The present situation justifies these extensions.

The report was signed by J. P. Morris (chairman), general mechanical assistant, A. T. & S. F.; J. A. Deppe (vice chairman), superintendent car department, C. M. St. P. & P.; W. N. Messimer, assistant superintendent of equipment, New York

Central System; L. Richardson, mechanical assistant to vice-president and general manager, B. & M.; G. E. McCoy, assistant general superintendent car equipment, Canadian National; E. L. Bachman, general superintendent motive power, Pennsylvania; A. E. Smith, vice-president, Union Tank Car Company, and M. F. Covert, general superintendent of equipment, General American Transportation Corporation.

The report was accepted with the exception of proposed revisions in Rule 3, section (h), which will be issued later after further modification.

Report of Committee on Wheels

Changes suggested in chilled-iron wheel design ---Progress reported in improving wheel shop methods

H. W. Coddington,
Chairman

The practice of some foundries and car-building plants in grinding the tread surface of cast-iron wheels prior to mating has resulted in conflict between the tape size cast on the back plate and the stencilled tape size on the front face of the wheel. The manner in which confusion arises is obvious when the mating of wheels is checked by inspectors since it would not be unlikely to find wheels correctly mated as to the tape size stencilled on the outside of the wheels while the "as-cast" size might be different. It is quite possible that, in grinding chilled wheels that have been in service, the white stencilled tape size may have disappeared and the as-cast size offers the only remaining indication of the depth of the chill.

The committee calls attention to the fact that it is essential that the original as-cast tape size markings should not be altered and if in the process of mating wheels there is difference between the as-cast and stencilled markings, the mating should be performed with respect to the stencilled tape size.

Instrumental Determination of Chill

This subject has previously been referred to in the 1941 report and information now develops that the instrumental process of determining the depth of the chill is, with the exception of one plant, in use in all foundries in the United States which have AMCCW inspection. The report points out that the use of instruments for chill determinations lends itself to the examination of an entire day's heat to a greater extent than it would to a specific lot of wheels being shipped to an individual customer.

The report suggests that this method has progressed to such a point that it should be given recognition in the A. A. R. specifications for cast-iron wheels and that during the coming year the subject will be advanced along this line.

Cast-Iron Wheel Design

In the 1943 report under this topic, attention was directed to the request of the cast-iron wheel manufacturers, as represented by their association, to increase the outside rim thickness of the 750-lb. wheel from 1⅞ in. to 2⅛ in.

A similar request has been received to increase the rim thickness of the 850-lb. wheels from the 2¼-in. rim thickness given this wheel in 1940 at the time the weight of wheels for 70-ton cars was changed from 825 lb. to 850 lb. The manufacturers consider an additional ⅛-in. rim thickness can be applied to the 850-lb. wheels and not exceed the present weight limits of the 850-lb. wheel.

The committee approved this recommendation with the understanding that the wheels thus cast will have the letter *H* cast on the wheel in line with and 2 in. beyond the serial number.

It was recommended that the rim thickness for the 750-lb. and 850-lb. cast-iron wheels be increased to 2⅛ in. and 2⅜ in., respectively, with the understanding that the change becomes effective March 1, 1945, in order to allow all manufacturers sufficient time in which to make the necessary pattern changes.

The committee recommended that this change should be submitted to letter ballot and if approved by the Association, Fig. 1 on page 8 of Specification M-403-41 should be revised as shown in the drawing.

Failure of Single-Plate Wheels

Because of the failure of 700- and 750-lb. cast-iron wheels of single-plate design, the committee believes that some limitations should be set-up to discourage the use of single-plate non-bracketed wheels. With this end in view a questionnaire has been sent out to 35 roads with the object of collecting data on the relationship existing between failures of non-bracketed wheels and bracketed wheels of the single-plate design as indicated by the number of each being removed for defective conditions. The information developed by this questionnaire will be a matter of study by the committee before recommendations are made.

Reclamation of One-Wear Wrought-Steel Wheels

Conforming with the recommendations contained in the Committee's report of 1943, Rule 98 was revised so that paragraph (i-5) provides when one-wear wheels are turned to multiple-wear contour on account of flange wear or due to being slid flat, the markings on the wheel shall be changed to read 1-WT. Such wheels are to be charged or credited on actual service metal basis.

Paragraph (i-4) of the same rule permits the turning of one-wear wheels removed on account of built-up tread or out-of-round. This presents the question as to the proper charges and credits as well as the markings on such wheels after turning.

It was the opinion of the committee that all one-wear wrought-steel wheels turned to the multiple-wear contour for any reason, should be marked 1-WT; and that one-wear wrought-steel wheels ground or turned and the one-wear contour retained should not be marked 1-WT.

This question, as well as the subject of charges and credits, was referred to the Arbitration Committee for further handling.

Older Type Steel Wheels in Passenger Service

A report by a member road of a failure, in passenger service, of a 36-in. multiple-wear wrought-steel wheel manufactured prior to the introduction of controlled cooling after forming gave rise to the suggestion that all such wheels should be prohibited from application to passenger cars. A study of this subject by the committee with representatives of the wrought steel wheel industry indicated that such failures, as reported by this road, have not necessarily been confined to wheels produced before the practice of controlled cooling was established. The opinion of the committee is that the establishment of a prohibitory rule would only serve as a hindrance in the maintenance of equipment and not contribute to the elimination of wheels which might fail.

The subject was considered of sufficient importance to warrant further study and a sub-committee was appointed for that purpose.

Wheel-Mounting Diagrams

Attention has been called to the fact that in neither paragraph 238 or Fig. 116 of the Wheel and Axle Manual is there

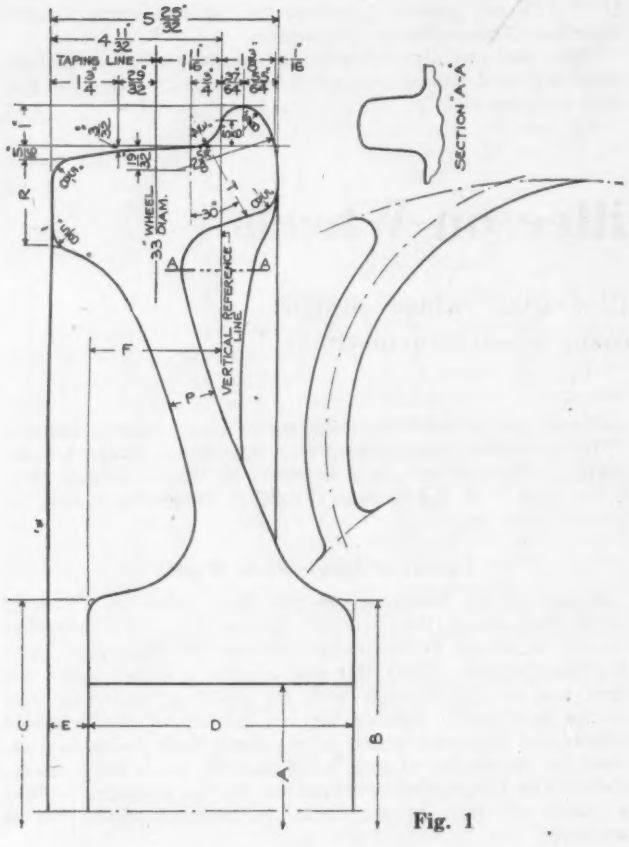


Fig. 1

any mention made as to pressure fit limits as indicated by the wheel-mounting chart.

In considering mounting diagrams, attention has been confined principally to the character of the pressure line. This portion of the diagram has been recognized as the proper index as to good wheel-mounting practice.

The length of the pressure fit has been of secondary importance since with a satisfactory pressure line a likewise satisfactory length of pressure fit will be obtained. Then too, any lost motion or irregularities in the attachments to the recording gauge that shows the length of the pressure fit would influence the length of this line to some extent.

Since the question has been raised, the committee has investigated conditions in shops and while this investigation showed there was considerable variation in the recorded length of the pressure fit with respect to the length of the wheel hub in the various shops, it was realized there should be some latitude provided for indicated length of pressure fit. The committee has recommended that this should be in the neighborhood of 93 per cent of the hub length of the wheel.

Wheel Shop Practices

The program of this committee to encourage better wheel shop practices has been carried forward and wheel shop inspections by the general mechanical committees have indicated that the work of the Wheel Committee along these lines has served to improve conditions.

The association has appointed a qualified inspector to give his attention to work of this character.

The report was signed by H. W. Coddington (chairman), research and test engineer, N. & W.; D. Wood (vice-chairman), engineer of tests, So. Pac.; E. E. Chapman, mechanical assistant, A. T. & S. F.; W. R. Hedeman, engineer of tests, B. & O.; J. Matthes, chief car inspector, Wabash; F. Holsinger, wheel shop foreman, I. C.; A. M. Johnsen, engineer of tests, Pullman Company; E. C. Hardy, assistant engineer, N. Y. C.: A. G. Hoppe, assistant to mechanical assistant to chief operating officer, C. M. St. P. & P.; H. H. Haupt, general superintendent motive power, Pennsylvania, and C. B. Bryant, assistant to vice-president, Southern.

The report was accepted and necessary items ordered referred to letter ballot.

Report of the Committee on Loading Rules

Many changes and additions to the rules and figures made necessary by shipments of military material are recorded

W. B. Moir,
Chairman

The annual report of the Committee on Loading Rules for the year 1944, covers all matters which have come before the committee since the last annual meeting report was presented in June, 1941.

Many changes and additions in the rules in effect at that time have been made in the interim, this action being necessary by your committee to meet the rapid change in shippers' methods and to promote better and safer securement for the many diversified types of loads that have developed since the war started. All of the changes and new rules embodied in this report, including those incorporated in present Supplement 2, which cancelled Supplement 1, were adopted only after careful study and consideration on the part of your committee.

Drastic change in loading of steel plates has been made. This action was brought about by the fact that transcontinental shipments of this material were getting in difficulty because heavier loading was resulting in side movement where total vacant space between car side and load was 18 in. or less. Such shipments did not require side securement under the present rules, with the result that many loads were found shifted over to one side of the car, creating a grave hazard, and in many such instances, derailment of cars occurred. It was therefore, after tests and comprehensive study by your committee and the special sub-committee on Car Construction, deemed highly desirable on shipments of this character, to reduce the permissible total side clearance to 8 in. Incidentally, the personnel of the Committee on Loading Rules has been augmented by a special sub-committee composed of the mechanical engineer of the division and four members of the Car Construction Committee to collaborate with your committee on loading problems. Their function is in an advisory capacity on engineering matters involving loading.

During the past three years the responsibilities of your committee have been greatly increased due to the transition from peace-time to war-time production of major industry. By reason of this fact, a large number of meetings resulted in order to cover every phase of the many loading problems presented to your committee by the War Department and shippers. Twenty meetings of the entire committee were held to dispose of the various subjects docketed for consideration. Twelve meetings of the Rules and Figures Committee were held for the purpose of preparing the necessary changes in

general rules and figures and 30 meetings with various shippers' groups throughout the country were held to collaborate on changes in loading practices. In addition to the above, 50 meetings were held with the War and Navy Departments by the special sub-committee on army and navy loading problems. All of this required considerable time on the part of your committee to obtain the desired results and create a better understanding between shippers and the carriers. Again, as in the past, the cooperation of the shippers in working with your committee was of the utmost benefit, and they are to be highly complimented for their efforts and assistance in the formulation of the various changes and additions in the rules.

During this year the Ordnance Department, United States Army, requested that a special supplement be prepared to cover the loading of standard military vehicles not transported in complete trains accompanied by and under direct supervision of military personnel. This has been prepared and was issued June 1, 1944, for the guidance of all concerned. Again, as in the past, the army personnel are to be complimented for their cooperation in the preparation of this supplement. It is hoped that it will be of material assistance to the shippers and carriers in the loading and transporting of military vehicles.

(The committee here included a list of 10 general rules and 69 detailed figures revised wholly or in part, also 15 detailed figures added and 3 deleted wholly or in part as published in Supplements 1 and 2 of the loading rules. The committee also included proposed additional changes in five rules and 38 figures which will become effective, after approval, with the next issue of the Loading Rules. The committee referred to the special supplement governing the loading of mechanized and motorized equipment which was published effective March 1 and included in the report a special supplement covering standard military vehicles not transported in complete trains which will be issued this month and later amplified to cover air-force, engineering and artillery units.)—Editor.

The report was signed by W. B. Moir, (chairman), chief car inspector, Pennsylvania; C. J. Nelson (vice-chairman), superintendent interchange, Chicago Car Interchange Bureau; T. W. Carr, superintendent rolling stock, P. & L. E.; A. H. Keys, assistant superintendent car department, B. & O.; G. D. Minter, district car inspector, N. & W.; H. H. Golden, supervisor, A.A.R. Interchange & Accounting, L. & N.; H. F. Lyons, acting superintendent car department, Reading Company; H. J. Oliver, assistant superintendent motive power, D., T. & Ironton; F. A. Shoulty, assistant superintendent car department, C., M., St. P. & P., and K. A. Svenson, general car inspector, Union Pacific.

The report was accepted.

Report of Committee on Couplers and Draft Gears

Development of an interlocking coupler for freight service started—Changes in list of approved draft gears recorded

R. L. Kleine,
Chairman

There are now approximately 6,000 tightlock couplers in service on passenger equipment cars and locomotive tenders, of which 5,790 are the former Type T and 210 the Type H coupler. These 6,000 tightlock couplers are in service on 28 railroads and Pullman cars. Of the 5,790 Type T couplers, about 400 have been modified in accordance with Mechanical Committee Circular No. 942-A to improve the anti-creep arrangement and apply the No. 6 operating mechanism. All Type H couplers have been applied with the No. 6 operating mechanism.

The service of these tightlock couplers is being carefully observed by the railroads and representatives of the manufacturers. These reports indicate that the modified T type couplers and the Type H couplers are giving generally satisfactory service.

Since December 1, 1943, the manufacturers have been furnishing all tightlock coupler knuckles and locks in the usual high-tensile steel, but heat-treated by quenching and tempering to increase the yield strength of the knuckle to approximately 300,000 lb. and to provide harder bearing surfaces between the knuckle and lock to reduce the present occasional sticking of locks.

To insure against the wedge lock sticking, the lock can be seated upon the knuckle tail shelf when the couplers are fitted up new although from service wear they approach this condition. At present, the couplers are fitted up so that the bottom of the lock is seated from ½ in. to ⅝ in. above the knuckle tail shelf to provide for wear and maintain the contour lines tight. By starting the coupler out with the wedge lock resting on the knuckle tail shelf, looseness in contour lines will develop more rapidly. Experiments are underway to determine this feature.

The Mechanical Committee has prepared and issued with the approval of the Committee on Couplers a new circular No. 144, covering Inspection and Maintenance of Tightlock Couplers in service. Copies of this circular may be obtained by addressing the Secretary of the Mechanical Division, Association of American Railroads, Chicago, or any one of the coupler manufacturers.

Recommendations—Tightlock Couplers

Your Committee suggests that the following items be submitted to letter ballot with recommendation for approval:

(a) The new design tightlock coupler, identified as A.A.R. Type H tightlock coupler, be approved as tentative standard for tightlock couplers for passenger equipment cars, superseding present alternate standard for Type T tightlock couplers.

(b) The complete set of gauges developed by the manufacturers to control the manufacture and interchange of parts of the A.A.R. Type H tightlock coupler be approved as tentative standard.

(c) The tightlock coupler operating mechanism, identified as A.A.R. No. 6 Tightlock Coupler Operating Mechanism for use with Type H and Type T latest modification, be approved as tentative standard. See Fig. 1.

(d) The coupler manufacturers be authorized to discontinue manufacture of present Recommended Practice Type T tightlock coupler, except knuckle, locks, and other fittings for maintenance and modification of existing Type "T" tightlock couplers.

Knuckle Failures on Passenger Cars

In considering the subject of coupler knuckle failures on passenger equipment cars at the meeting of your Committee on February 3, 1943, each member of the Committee, as well as representatives from the Union Pacific, Southern Pacific and The Pullman Company, were requested to assemble detailed information of all passenger equipment knuckles failing during the three months period of March, April and May, 1943, and to send the failed knuckles, together with information concerning each failure, to the Chairman of the Coupler Manufacturers Mechanical Committee.

There were 29 failed knuckles received, viz.: One cracked tightlock knuckle, seven Type E knuckles, eight Type D knuckles, and 13 miscellaneous non-standard types.

Analysis of these failed knuckles indicated that the cracked tightlock knuckle might be attributed to a foundry defect. Of

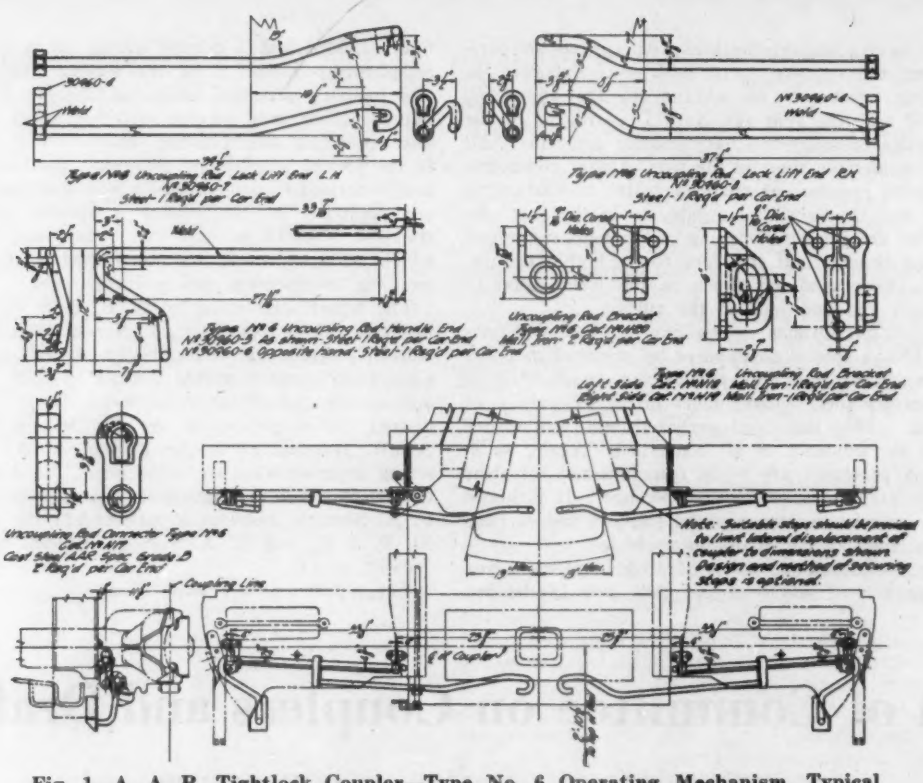


Fig. 1—A. A. R. Tightlock Coupler—Type No. 6 Operating Mechanism, Typical Application for Use with Type H Couplers and Present Couplers Modified

the seven type E knuckles that failed, all of them showed minor manufacturing defects consisting of porosity or small gas pockets; one of these seven failures resulted from an emergency application of the brakes. The Type D knuckles are obsolete and the remaining 13 were the old M.C.B. type which have about 50 per cent of the strength of the Type E knuckle.

Study is being made as to the possibility of increasing the strength of Type E knuckles and your Committee is working with the coupler manufacturers to see what can be accomplished along this line.

Proposed Interlocking Freight Coupler

The Mechanical Committee of the coupler manufacturers was requested by the Committee on Couplers to give consideration to the development of a postwar interlocking coupler for freight equipment for the purpose of supporting and thus preventing the mating coupler falling to track in case of coupler breaking or coupler attachments failing. The arrangement should be such that it will operate in conjunction with and secure the benefits of those features now incorporated in the tightlock coupler in passenger service. Naturally, these benefits will not be obtained until the couplers of the cars coupled together both contain this feature, but will become progressively effective as new couplers are applied.

The design of such a coupler is being considered by the Mechanical Committee of the coupler manufacturers and one preliminary design has been evolved. This particular design has an interlocking and anticreep arrangement similar to those features in the A.A.R. Type H tightlock coupler, except it is provided with a straight lock and requires no machining of parts or fittings.

The Mechanical Committee of the coupler manufacturers is progressing this matter, but it should be understood that a single standard must ultimately be produced which will mate with and maintain the locking and supporting features of the tightlock passenger couplers.

Involved in a design of this kind is the car construction, as lateral clearance for short curve coupling and vertical clearance for passing cars over the hump. These requirements affect center sills, location of draft stops, spring or adjustable carrier irons, etc.

To progress this matter, the approval of the General Committee is requested, which should carry with it the appointment of a Subcommittee from the Coupler and Draft Gear Committee and a Subcommittee from the Car Construction Committee to work with the Mechanical Committee of the coupler manufacturers to evolve and recommend an acceptable design.

Coupler and Yoke Defects—Train Parting

The parting of trains as the result of coupler shank or coupler yoke failures always results in damage and serious delays. The importance of discovering these coupler shank and yoke defects and renewing the parts involved before actual road failure occurs prompted the issuance of Circular D. V.—1045, dated July 15, 1943, directing attention to the location of such defects for which inspectors and repairmen should be on the alert when cars are on the shop track for any cause.

The separation of trains due to lock-lift toggles either missing or being incorrectly applied to Type D and E rotary-operated couplers was of such a serious nature a year ago it was necessary to issue Circular D. V.—1044, dated July 15, 1943.

It is the observation of your Committee that each of these informative circulars has been beneficial in improving the condition, but the importance of the supervision seeing that the provisions contained in these two circulars are complied with cannot be emphasized too strongly.

New Riveted Rotary-Lock-Lift Assembly

Upon recommendation of your Committee in the 1943 report, a provision was inserted in Interchange Rule 3 (c) (12) that the assembly riveted-type lift lever of the bottom-operated Type E coupler is required on all cars in interchange on and after January 1, 1945.

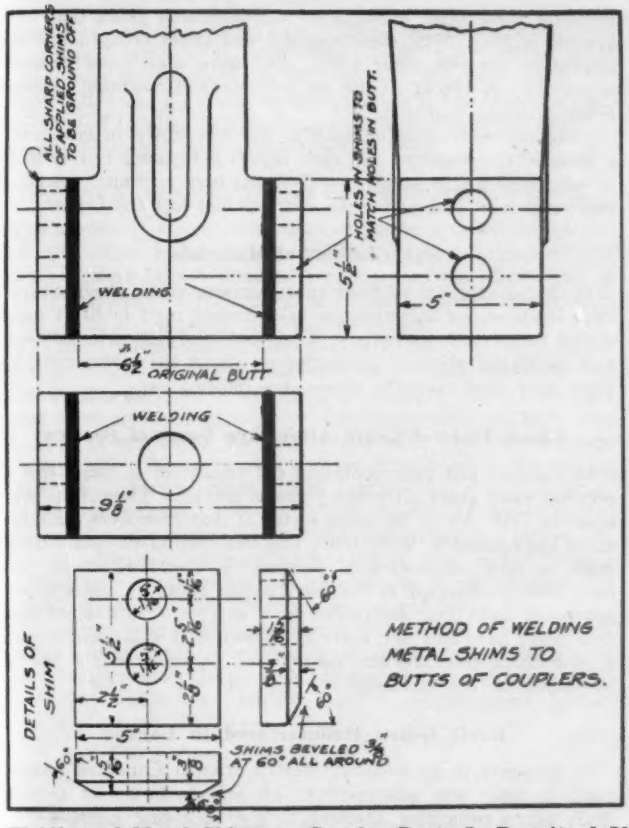
A member suggests that on account of the difficulty of obtaining this riveted assembly from the manufacturers, he be permitted to rivet the trunnion of the toggle to the lock-lift lever, introduce a ⅛-in. washer and electric weld the washer to the trunnion.

A review of this suggestion develops the following:

(a) The lengths of the trunnion on some of the existing toggles are too short to assure a satisfactory weld.

(b) A special washer would be required.

(c) Many of the existing toggles, perhaps more than 50 per cent, are made in malleable iron. This material is not satisfactory to permit welding.



Welding of Metal Shims to Coupler Butts Is Permitted If Recommended Procedures Are Employed

Since this suggestion was received, the manufacturers advise they are now in position to furnish the riveted type of lock-lift assemblies, but on account of the number of the present two-piece lock-lift assemblies that must be changed out, it is recommended that the effective date when all cars must be equipped, be extended one year or to January 1, 1946.

Draft-Key Retainers

A member road has suggested a type of draft-key retainer, as per sketch (Fig. 2), for use particularly in connection with two- and three-key Farlow attachments where the cheek plate is on the outside of the center sill and the standard type retainer has a tendency to override the flange of the cheek plate thus causing the cotter at the bottom end of the retainer to be sheared. This suggested retainer has the ends of the cross T elongated and curved to fit around the edges of the draft key. These extended ends of the cross T serve the purpose of preventing the retainer from turning and fouling the cheek plate and in this manner protect the cotter against the shearing action that occurs with the standard type key.

This device has been referred to the Car Construction Committee for consideration. It is the opinion of your Committee that the subject of an improved cross key retainer, free from patents, should receive prompt consideration by a joint subcommittee of the Car Construction Committee and Committee on Couplers and Draft Gears, and as soon as it is evolved and approved by the General Committee, be submitted to letter ballot for adoption.

Nose Wear of Knuckles

A request was received from a member road indicating the desirability of building up knuckles on account of having exceeded nose wear limit gauge 24992-A. Investigation of this request developed that 90 per cent of the knuckles being removed for nose wear on this line were Type D, and since it is undesirable to perpetuate the Type D knuckle, its manufacture now having been discontinued in 1933, it was concluded that the proposed reclamation of couplers for nose wear be not approved.

In consideration of giving this attention to Type E knuckles it was the conclusion there would be too much mechanical work involved in machining built-up knuckles to the proper contour as well as the careful heat treatment that would be required to justify this process of reclamation.

Welding of Shanks in Vicinity of Key Slot

Tests conducted in the Association laboratory at Purdue University have indicated that it is not necessary to prohibit welding of coupler shanks in the vicinity of the key slot. Therefore, the Subcommittee on Welding of Couplers and Coupler Yokes has recommended that Paragraph (c-1) of Section C, Interchange Rule 23, be revised as follows:

Proposed Form: (c-1) Transverse cracks, including shrinkage cracks, in shank of coupler, from end of shank to and including back wall of horn, may be welded. There is no limitation in length or depth of cracks that may be welded.

The above recommendation has been approved by this committee and the secretary instructed to refer same to the Arbitration Committee.

Welding Metal Shims on Butts of Couplers

Several railroads have stated they have an accumulation of 5-in. by 7-in. shank couplers with 6½-in. butts for which they have only a limited use, but are badly in need of 5-in., 7-in. and 9⅛-in. butt couplers. Permission was requested to weld metal plates to the top and bottom of the butts of these 6½-in. butt couplers to bring them up to 9⅛ in. A subsequent canvass of a representative list of member roads showed that several of these roads have substantial quantities of such couplers available for conversion.

The Subcommittee on Welding of Couplers and Cast Steel Yokes was instructed to conduct tests and submit recommendations. Specimens were prepared by the Pennsylvania and tests were made under the 27,000-lb. drop hammer at the Association laboratory at Purdue University. Standard 9⅛-in. butt couplers were included in the tests to provide a basis for comparison. After completion of these tests, a report was submitted by the subcommittee, together with the following recommendations:

Based upon results of tests, it is permissible to adapt couplers having 6½-in. butts by welding metal shims on top and bottom of butts, in accordance with the following regulations:

(a) Shims should be cut to proper size—1 5/16 in. by 5 in. by 5½ in.

(b) Drill shims in pairs to match holes in related coupler butts.

(c) Grind coupler butts to give neat seating of shims.

(d) Bevel shims ⅜ in. at 60 deg. angle (or give J weld preparation) all around contact face. No beveling of coupler butt permitted.

(e) Tighten shims to welding position on coupler butt by dummy pin and key, and exercise care to see that shim edges are flush with corresponding edges of coupler butt.

(f) After shims are thus in position, weld to coupler butt by the shielded-arc electric method.

(g) Normalize the welded coupler.

(h) All sharp corners of applied shims must be removed by grinding.

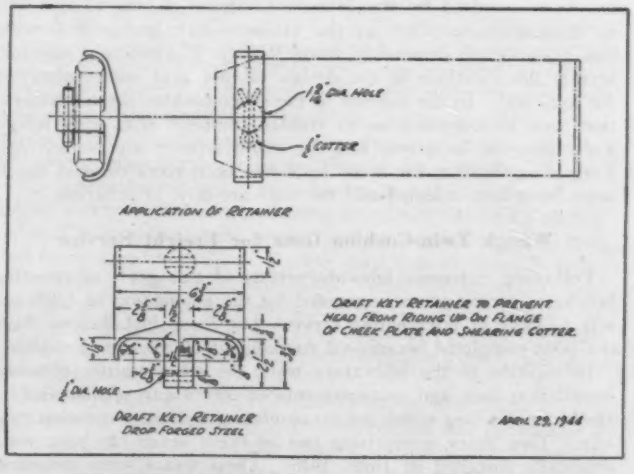


Fig. 2—Suggested Type of Draft Key Retainer

The above recommendations have been approved for submission to the General Committee, with the further recommendation that a circular be distributed to all member roads and included in the Rules of Interchange.

Limitation on Welding Couplers and Yokes

As stated in the report last year, a series of tests were conducted under the direction of a special subcommittee for the purpose of determining whether present restrictions on the welding of couplers and cast-steel yokes could be safely revised to conserve materials during the present emergency. The recommendations of the subcommittee were subsequently approved, with some modifications, by this committee and the Car Construction Committee and then incorporated in the Interchange Rules.

The original tests and recommendations were limited to welds made by the electric process. Later the subcommittee was enlarged and instructed to conduct similar tests on specimens welded by the oxyacetylene process, to ascertain if the emergency provisions already approved for these parts when welded by the electric process could be extended with safety to include the oxyacetylene process.

These latter tests have been completed. Based upon the results of these tests, a majority consisting of three members of the subcommittee recommended "that present restrictions on gas welding of cracked couplers and yokes be not removed, since the average railroad reclamation plant is not prepared at the present time to perform this work satisfactorily by gas welding." One member submitted a minority report with the recommendation "that the shielded arc process be prohibited on cast-steel couplers and yokes and that the oxyacetylene process, using the specified procedure that was followed by the C. B. & Q., be made mandatory in making tension welds on these parts."

These reports were received by this Committee and the recommendation contained in the report of the majority of the subcommittee is approved.

The majority and minority reports are on file in the office of the secretary of the Mechanical Division and are not reproduced in this submission on account of the volume of the reports.

The number of approved draft gears still stands at twelve, but these twelve gears now represent the product of seven instead of six different manufacturers. Three of the twelve gears are conditionally approved.

Cardwell M-25 (Conditionally approved)
Edgewater B-32-KA (Approved)
Miner A-2-XB, Cylinder D-7940 (Approved)
Miner A-22-XB, Cylinder D-7935 (Approved)
National M-17-A (Approved)
National M-50-B (Approved)
Peerless H-1-B (Approved)
Hulson-Clark 150-B (Conditionally approved)
Waugh-Gould 403 (Approved)
Waugh-Gould 410 (Conditionally approved)
Westinghouse NY-11-F (Approved)
Westinghouse NZ-11-F (Approved)

The Association has been officially advised that ownership of the Waugh-Clark Type 150-B, a conditionally approved draft gear, has been acquired by the Hulson Company, Chicago, and will be designated hereafter as the Hulson-Clark gear. Following this transfer of ownership from Waugh Equipment Company, several modifications in the design of this gear were submitted for approval. In the opinion of the subcommittee these modifications are so extensive as to require complete new tests before a decision can be given, and the manufacturer was so advised. Formal application for these tests has been received, test specimens have been selected and the tests are now in progress.

Waugh Twin-Cushion Gear for Freight Service

Following extensive laboratory tests of this gear, as reported last year, permission was granted for the application of 1,400 car sets to cars in interchange service, but these installations have not been completed because of curtailment of the use of rubber.

In addition to the laboratory tests, the subcommittee obtained installation data and measurements on seven car sets applied to stock express cars which are accumulating mileage somewhat rapidly. Two gears, comprising one of these seven car sets, were originally installed in June, 1940. These gears were removed, checked for capacity, inspected and reapplied in April, 1941. Recently these same gears, also two additional gears that were applied in May, 1941, were removed and again brought into the laboratory for test, after which they were once more returned to service. A report on the performance and condition of these gears is being prepared.

Also, one gear is being held in the laboratory in continuous assembled compression, and each month a capacity test is made to determine how it stands up. This has been continued for about two years now, and so far the gear has not lost any capacity.

Substitutions of Materials

With the approval of your subcommittee, some manufacturers have made minor substitutions in materials used in draft gears during the present emergency. Complete information is not available as to the physical properties of all of these materials but steps have been taken to obtain this information.

Check Tests of Gears After Five Years of Service

Our report last year contained the results of a check test of certified draft gears after five years of service. These tests were made in 1941. All of the gears tested at that time were manufactured and applied in 1936. Since that time two of the gears which made a very unsatisfactory showing in the 1941 check tests have been reclassified in the Interchange Rules as non-approved gears and have been superseded by new types. As soon as these new gears have had five years of service it is proposed to make a new check test, and the results will be reported for the information of the members.

Draft Gears Manufactured in Canada

In response to an inquiry received from a Canadian member road, a letter was addressed to all manufacturers of certified draft gears requesting answers to the following questions:

1. Are any of the draft gears manufactured by your company under A. A. R. certificate of approval made in Canada, and, if so, will you please state name and location of Canadian plant?
2. Does all of the information which you have filed with this office relating to design, material and methods of manufacture, including working-in processes and test facilities and procedure, apply equally to draft gears produced in both the United States and Canada? If not, please describe all variations in practice.
3. Members of the Subcommittee on Draft Gears have at various times inspected each of the plants in the United States where certified gears are produced. Have you any objection to an inspection of your Canadian plant and facilities by one or more representatives of the Subcommittee?

Replies to these letters indicated that some Canadian manufacturers were not complying with all A. A. R. specification requirements. Subsequently a representative of the subcommittee visited each of the Canadian plants. This inspection revealed a wide variety of conditions, some of which were considered unsatisfactory. In one instance, due to a misunderstanding, an obsolete design of gear was still being manufactured and sold as a certified gear. At this same plant no test facilities had been provided and there was no way of determining whether or not gears manufactured met specification requirements. One plant was found fully equipped with drop test and other necessary facilities and the draft gears produced appeared to be equal in all respects to those manufactured in the United States.

Wherever unsatisfactory conditions were found, however, prompt assurance was given that these would be corrected as quickly as possible.

In view of the above facts, it was decided, with the approval of the Committee on Couplers and Draft Gears, that a reasonable time would be allowed to install necessary facilities and that a test would then be made of all certified draft gears produced in Canada, as follows:

Peerless H-1-B
Miner A-22-XB, Cylinder D-7935
Miner A-2-XB, Cylinder D-7940
Cardwell M-25
Westinghouse NY-11-F
Westinghouse NZ-11-F
Waugh-Gould 403

Specimens will be selected from railroad or car builders' stocks by a representative of the subcommittee and tests will be made in the Association laboratory at Purdue University. It is expected that these tests will be made within the next few weeks. Both the Canadian National and Canadian Pacific are cooperating with the subcommittee in this check.

Blocking Couplers on Duryea Cars with Multiple Loads

The attention of your Subcommittee has been called to Loading Rule 21 which requires that, "except on cars equipped with Duryea underframes," couplers between cars on which load is fully or partially carried, must be blocked. Question has been raised as to the necessity for the quoted exception.

For conventional cars equipped with draft gears it is specified that blocks be placed between the coupler horn and the striking casting. Blocks so placed on Duryea underframe cars would have little effect because the construction is such that only 1 in. of movement, and this in buff only, is possible between the coupler and the center sill. On the other hand, if the coupler is blocked against movement with respect to the car body, as it is on conventional cars, the Duryea cushioning device on all cars so blocked would be rendered inoperative. This is not the case with cars equipped with friction draft gears because the draft gear on the other end of each car is not affected and can still afford its usual protection to car and lading.

Car impact tests conducted by your Subcommittee have shown that the normal movement between car bodies, under impact, is greater with cars of Duryea underframe construction than with cars having standard friction draft gears. For example, in two tests where the speed of impact in each case was exactly the same, 5.03 m.p.h., the results were as follows:

With one car (A) striking a string of three standing cars, B, C, and D, coupled. Total weight of each car 187,000 lb.

Cars equipped with	Speed of impact, m.p.h.	Max. movement between car bodies B and C, in.	Max. movement between car bodies C. and D, in.
Standard draft gears	5.03	$5\ ^{5}/_{16}$	$5\frac{1}{16}$
Duryea underframes	5.03	$10^{11}/_{16}$	$14^{3}/_{16}$

It is recommended that the facts set forth above be referred to the Committee on Loading Rules for consideration.

Engineer Draft Gear Tests

W. E. Gray, who has been Engineer Draft Gear Tests in charge of the Association Draft Gear Laboratory at Purdue University since 1927, resigned during the past year to accept a position in the draft gear manufacturing industry. Upon the recommendation of Dean A. A. Potter, T. K. Sanders has been employed to succeed Mr. Gray.

The report was signed by R. L. Kleine (chairman), assistant chief of motive power-car, Pennsylvania; H. W. Coddington (vice chairman), research and test engineer, N. & W.; F. T. James, chief motive power, D. L. & W.; George W. Bohannon, assistant to chief mechanical officer, C. & N. W.; W. Bohnstengel, engineer of tests, A. T. & S. F., and H. W. Faus, engineer motive power, N. Y. C.

The report was accepted and necessary items ordered referred to letter ballot.

Report of Committee on Geared Hand Brakes

Ten geared hand brakes receive approval of Committee—others undergoing test

R. G. Henley,
Chairman

Preliminary tests of geared hand brakes made in the summer of 1941 demonstrated a need for a revision of the A. A. R. Specifications covering these brakes. It was also recognized that it would be necessary to set up a prescribed method of testing such brakes and to make provision for issuing certificates of approval. Suitable equipment was installed in the Draft Gear Testing Laboratory at Purdue University and to the present time the following vertical-wheel-type hand brakes have been tested as shown in the table below and certificates of approval issued.

Horizontal and lever-type brakes have not yet been tested. When consideration was given to the actual procedure to be followed in testing the horizontal-wheel brake it was realized that the section relating to that type in the 1942 revision of the specifications for geared hand brakes could not be followed. Wheels on these brakes are 16 in. in diameter as compared with 22 in. which is universal on the vertical type. Using two hands on a horizontal wheel, a man exerts about 28 per cent as much braking force as the same man exerts with one hand on a vertical wheel. This was established by test and necessitates the recommendation of a change in a part of the last paragraph of Section 2 of the caption Horizontal Wheel Brake on page E-62-October 1, 1942, of the Manual of Standard and Recommended Practice. As proposed, the text would read, "Hand-brake leverage ratio selected must provide braking power of not less than 20 per cent of total weight of car plus nominal capacity based on a force of 220 lb. at the rim of a 16-in. diameter wheel or equivalent loading." The rule now reads, "—— based on a force of 125 lb. at rim of wheel."

The periodic lubrication of geared hand brakes has been given consideration and the committee recognizes the value of proper lubrication and is of the opinion that provision should be made for some definite interval at which the brakes should be given thorough lubrication attention. No recommendation is made at this time pending further consideration of the subject.

Brakes Tested and Approved

Manufacturer	Type Designation
Ajax Hand Brake Company	Drawing 14038
Champion Brake Corporation	Drawing 1148
Champion Brake Corporation	Drawing 1124
Klasing Hand Brake Company	Drawing D-959
W. H. Miner, Inc.	Pattern D-3290-X
Superior Hand Brake Company	Drawing 566
Union Asbestos and Rubber Company (Equipment Specialties Division)	Drawing 3450-A
Universal Railway Devices Company	Drawing 4885
Universal Railway Devices Company	Drawing 5550
Universal Railway Devices Company	Drawing 5700

It is recommended that a requirement be added to Interchange Rule 3 to provide that cars built new, or rebuilt (when not already equipped with geared hand brakes), on or after January 1, 1945, must be equipped with A. A. R. Approved Geared Hand Brakes.

The report was signed by R. G. Henley (chairman), general superintendent motive power, N. & W.; E. P. Moses, engineer rolling stock, N. Y. C.; J. P. Lantelme, general foreman, Pennsylvania, and W. I. Cantley, mechanical engineer, Mechanical Division, A. A. R.

The report was accepted with the exception of a single correction; namely, the addition of a footnote to the last paragraph of the committee's report stating that it refers to vertical-wheel hand brakes only. Necessary items in the committee's report were ordered referred to letter ballot.

Report of the Committee on Tank Cars

Results set forth of trials of various substitutes for tank cars conducted under supervision of the committee

F. Zeleny,
Chairman

(The committee reviewed, for the record, its extensive activities during 1941-42 and 1942-43 including the development of specifications for emergency designs of chemical containers and gasoline car tanks required for military service and presented the following report of work done in 1943-44.—Editor.)

During the year the committee considered a total of 170 dockets and applications for approval of 4,153 designs, covering materials and construction of new shipping containers for mounting on new cars or for replacement on existing cars.* One application covered one multiple-unit car to be used for the transportation of 15 Class I.C.C. 106-A-500 one-ton containers. Seventy-seven applications covered alterations in, additions to, or conversions and reconditioning of 2,857 existing tank cars or shipping containers.* Seven applications requested approval of tank-car-appurtenance designs, or materials with reference to specific cars.*

At the solicitation of the Bureau of Service, the committee reviewed designs for, and provided recommendations with respect to, welded steel flasks proposed by the navy department, Bureau of Aeronautics, for the transportation of helium.

Definitions and Designating Letters

The committee formulated a general revision of the Class T tank-car type definitions and designating letters. The revised definitions provided descriptions of the various types of tank cars based on their physical characteristics and delete the former references to the ladings permitted to be charged into the tanks with which they are equipped. The revised definitions also provide a convenient code for the use of owners in listing their tank cars in The Official Railway Equipment Register.

By direction of the General Committee, recommendations of the Committee on Tank Cars were submitted to letter ballot. Notice of adoption of these recommendations is contained in Circular No. D. V.—1051.

Substitutes for Tank Cars

Starting in 1941, with the release of oil tankers from their normal service of supplying the eastern seaboard refineries the demand for tank cars was greatly increased. Inability to meet this demand at all times resulted in there being brought to the committee's attention all manner of suggested substitutes for the rail movement of petroleum and petroleum products. Upon review, a majority of these suggestions were found to be impractical or involved serious hazards to rail transportation. Approval of these was withheld.

For those few suggestions having some merit the committee authorized the fitting up of cars for service trials and restricted the use of these to the handling of the less hazardous inflammable materials. Those so authorized were as follows:

(The committee here described in some detail the application of Mareng cells to Pennsylvania auto car 69741, Flexitanks to Santa Fe box car 118032 and similar equipment to four S. E. R. X. (formerly D. T. & I.) all-steel auto cars. Seepage or leaks and other defects developed in test service and these cars were ultimately restored to their former condition.—Editor.)

L. C. L. Corp. Cement Containers

Early in 1943 the committee approved proposal of the L. C. L. Corp. to convert one hundred car sets of their air-activated cement containers, which are regularly handled on gondola cars provided with suitable devices for retaining the containers in position while in transit, so as to make these suitable for the transportation of fuel oil and other petroleum products having flash point above 80 deg. F. Some of the cars assigned to this service mounted five containers having a total capacity of 8,750 gal. while others had six containers having an aggregate capacity of 9,720 gal. No reports have been furnished to indicate that any difficulties have occurred in the operation of these containers in petroleum products service.

Baltimore & Ohio Box Car 390050

It was quite apparent from the numerous suggestions for new types of liquid transport rail vehicles offered that these did not take into account the serious fire and explosion hazards involved in their proposed use. To indicate clearly the nature of equipment that would meet with the committee's approval for emergency service in the handling of the higher flash point petroleum products certain fundamentals, which it was felt would provide a reasonable degree of safety, were first determined upon. Following this, specifications for containers to be installed in house type cars were drawn and arrangements made to fit up a test car based on these. It was agreed that only cars of which there was some surplus should be used so that if the test confirmed the committee's judgment additional cars could be equipped promptly should the demand continue.

The specifications called for a design of welded container having walls with a minimum of 0.10 in., preferably 0.125 in. thickness, in which the sides, ends and tops would be corrugated to provide increased stiffness. The specifications also required the containers to be equipped with a two-per cent expansion dome having connection to covered roof openings for top loading and syphoning of contents. The Baltimore & Ohio furnished a car to the same design as the one it had fitted with steel-lined wooden tanks and arrangements were made with Youngstown Steel Door Company to fabricate and install the corrugated-steel tanks with all necessary fittings. The completed car B. & O. 390050 equipped with five of these corrugated steel tanks having a total capacity of 12,500 gal. filled with water was subjected under direction of the committee to impact tests at the Youngstown, Ohio plant of Youngstown Steel Door Company on April 20, 1943.

The test demonstrated that only some minor changes, particularly having to do with improving the blocking arrangement, were necessary. After these had been made the car was assigned to service on the Baltimore & Ohio between Canton, Md., and Washington, D. C., handling Diesel fuel oil. It received its first load on May 6, 1943. Reports furnished cover a total of thirty-six loaded trips. During these a total of 457,503 gal. was handled in loads ranging from 12,533 to 12,969 gal. The committee is agreed that should there be need for additional equipment for emergency transportation of petroleum products having flash point above 110 deg. F. such cars as may be required should be fitted up along the same lines as was B. & O. box car 390050.

The only defects developing during this service were four slight leaks all being readily corrected without any loss of service of this car.

Toncan Iron Tanks

Upon recommendation of the committee, as concurred in by the Bureau of Explosives and supported by results obtained in service trials of 25 similar cars authorized by the Commission's order of August 6, 1941, for experimental service trials transporting sulphuric acid, the I.C.C., by order dated October 27, 1943, authorized the construction and similar service trials of 50 additional tank cars conforming to Specification I.C.C.-103-A except that Toncan iron plates were permitted to be substituted for specification open-hearth boiler-plate steel of flange quality in the fabrication of the tanks.

* The detail lists are not included in this abstract of the committee's report.

Modification of I. C. C. Regulations

To make available additional equipment for the transportation of liquefied petroleum gas having pressure not exceeding 45 lb. gauge per sq. in. at 105 deg. F., then required to be promptly moved to processing plants to avoid shutdowns at the producing points due to lack of storage or at the processing plants because of lack of these materials, the committee recommended modification of the Commission's regulations to permit the use of inflammable liquid cars having some minor modifications for a limited time and in a restricted territory be employed to relieve the situation. This recommendation was concurred in by the Bureau of Explosives and the required authorization is contained in I.C.C. order of January 8, 1944.

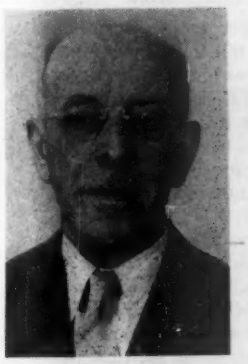
The Commission's order of January 8, 1944, also further increased the utility of inflammable liquid cars converted for liquefied compressed gas service and so marked without the necessity of any physical changes, if the cars meet the specifications prescribed, should it be desired to use these for the transportation of inflammable liquids having vapor pressure not exceeding 40 lb. per sq. in., absolute, at 100 deg. F. This modification of the regulations resulted from recommendations submitted to the commission by the committee and the Bureau of Explosives.

The report was signed by F. Zeleny (chairman), engineer of tests, C. B. & Q.; W. C. Lindner (vice-chairman), chief car inspector, Pennsylvania; A. G. Trumbull, chief mechanical engineer, C. & O.; L. R. Schuster, engineer car construction, Sou. Pac.; R. D. Bryan, mechanical assistant, A. T. & Santa Fe; L. R. Christy, superintendent car department, Missouri Pacific Lines; D. S. Clark, administrative assistant to head, School of Mechanical Engineering, Purdue University; A. E. Smith, vice-president, Union Tank Car Company; R. T. Baldwin, secretary, The Chlorine Institute, Incorporated; H. J. Gronemeyer, supervisor car equipment, E. I. duPont deNemours & Company, Inc.; R. W. Thomas, manager chemical products department, Phillips Petroleum Company; G. W. Thomas, master car builder, Deep Rock Oil Corporation.

The report was accepted.

Changes in Specifications for Materials

New specifications proposed for machine bolts and nuts
Two specifications reaffirmed; 15 others revised



T. D. Sedwick,
Chairman

The Committee on Specifications for Materials has had under consideration, and has made the following changes and revisions in certain standard specifications and emergency specifications:

Axles

Specifications M-101-41, axles, carbon steel, for cars and locomotive tenders, carry, in Par. 23 (a) a sentence which determines the dimensions of the countersinks in the end of the axle. Owing to the fact that larger countersinks have been found desirable for large axles, and a different design of countersinks for roller-bearing axles, this sentence as it now reads is in conflict with latest developments.

It was therefore decided to omit all reference to dimensions from the specifications, leaving them to be indicated by the appropriate committees handling designs. The changes involved in these specifications are as follows: Revised from 23—Workmanship.—(a) The axle shall conform to the size and shape specified by the purchaser. *Centers shall conform to the design and dimensions shown in the manual.*

Carbon-Steel Spring Bars

Specifications M-112-42, steel bars, carbon, for railway springs were issued June 1, 1943, to include spring steel bars of 6-in. to 8-in. widths, which are not covered in the standard specifications M-112-42.

Boiler and Firebox Steel

Specifications M-115-38, steel boiler and firebox for locomotives. (a) It is recommended the following change in these specifications be submitted to letter ballot: 6. Tension tests (a).—Change the tensile strength range of 52,000-62,000 lb. per sq. in. for Grade A firebox steel shown in table, to read: 55,000-65,000.

(b) Editorial changes have been made as follows: Title of specifications has been changed to read, "Steel, Carbon, Boiler and Firebox, for Locomotives."

1. Scope.—Add the word "carbon" after the words "two classes of" in the first line.

13. Weight.—In the table of permissible overweights insert the figure "14" in the first line covering plates 5/16 to 1/4 in. in thickness, and 96 to 108 in. exclusive in width. Also amplify the table by addition of two columns "144 to 168 excl." and "168 or over". Add the following note: "Note.—Permissible variations in weight for individual plates shall be one and one-third times the amounts prescribed in this table."

(c) Emergency Specification E-M-115-43 were issued June 1, 1943. To conform to the above recommendations in respect to changing the title of the standard specifications, it has been agreed that the title of the emergency specifications be changed accordingly, that is, to read: "Steel, Carbon, Boiler and Firebox, for Locomotives."

(d) In connection with specifications covering boiler and firebox steel, attention is called to the index to Sec. A of the Manual. References to A. S. T. M. specifications for special grades of boiler and firebox steel have been included.

Steel Shapes, Plates, Bars; Wrought Iron Bars

Specifications M-116-42, steel, structural, shapes, plates and bars. In order to clarify certain paragraphs of these specifications, and to eliminate slight, unintentional discrepancies between this and equivalent A. S. T. M. specifications, a number of editorial changes have been made. A typographical error was also corrected in Specifications M-302-41, refined wrought-iron bars.

Journal Bearings

Specifications M-501-41, bearings, journal, lines, have been changed as follows: Sec. III. Permissible Variations, Par. 8, Gaging: Reference to sheet of the manual corrected to read "D-24". Sec. V. Marking, Par. 10: Fig. 1 on page 3 of the specifications omitted and the first sentence of Par. 10 changed to read as follows: "The bearings shall be cast with the marks as shown on sheet ED-24 of the manual, latest revision."

Rubber

Emergency Specifications for Hose: Because of limitation orders issued by the War Production Board, covering the use of natural rubber, and substitution of synthetic rubber, it has been necessary to revise the emergency specifications for these products. These specifications are as follows: E-M-601-44—Hose, Air Brake and Train Air Signal; E-M-602-44—Gaskets, Air Brake Hose; E-M-603-44—Hose, Air, Gas and Oxygen; E-M-604-44—Hose, Cold Water, Wrapped and Braided; E-M-605-44—Hose, Steam and Hot Water; E-M-606-44—Hose, Tender Tank.

Emergency Specifications E-M-607-44 have been issued annulling the present standard methods of tests for rubber goods, and adopting the standard methods of the A. S. T. M.

New Car Oil

Specifications M-906-39, new car oil have been changed to read: Sec. I, Par. 2: Item (3) corrected to read as follows: "(3) Pour Point, upper maximum—". Par. 4: Last line of this paragraph corrected to read: "Pour point test———".

Machine Bolts and Nuts

New specifications covering machine bolts and nuts, identified as M-125-44, have been prepared. The committee recommends that these be submitted to letter ballot. The Locomotive Construction Committee and the Car Construction Committee have approved them.

Reaffirmed Specifications

In accordance with present practice, the following standard specifications, which had not been revised within the past six years, were reviewed, with the idea of bringing them up to date. No changes were recommended, and they are therefore identified as "Reaffirmed". These are as follows: M-301-37—Iron and Steel Chain; M-401-37—Brake Shoes.

The report was signed by T. D. Sedwick, chairman, engineer of tests, C. R. I. & P.; C. B. Bryant, vice-chairman, assistant to vice-president, Southern; F. Zeleny, engineer of tests, C. B. & Q.; H. G. Burnham, engineer of tests, Nor. Pac.; H. P. Hass, engineer of tests, N. Y., N. H. & H.; J. R. Jackson, engineer of tests, Mo. Pac.; H. G. Miller, mechanical engineer, C. M. St. P. & P.; L. B. Jones, engineer of tests, Pennsylvania; W. R. Hedeman, engineer of tests, B. & O.; W. F. Collins, engineer of tests, N. Y. C.; W. Bohnstengel, engineer of tests, A. T. & S. F.; R. McBrian, engineer standards and research, D. & R. G. W.

The report was accepted and necessary items ordered referred to letter ballot.

Report on Brakes and Brake Equipment

Service tests of 150 sets of D-22 control valves under way to determine service life between cleanings

R. E. Baker,
Chairman

In 1935, The Garlock Packing Company submitted samples of their brake cylinder packing cups No. 7752, with a request that the use of such cups be permitted on cars offered in interchange service. Through the services of a member railroad, a number of these cups were procured for test purposes and a sub-committee appointed to follow the tests. These cups were compared with present cups at temperatures of —30 deg. F. and +160 deg. F. as well as placed in actual road service for a number of years on caboose cars.

The sub-committee has made a favorable report on the service of these cups on the basis of the above tests, in which this committee concurs, and we recommend that the Garlock packing cups No. 7752 be permitted for use on cars offered in interchange service.

Tests of D-22 Control Valves

The HSC brake equipment, now being widely used on modern passenger cars and Diesel locomotives employing the D-22 type of control valve, was designed and constructed to produce satisfactory operation over long periods of time with the minimum amount of maintenance. This was accomplished by giving due consideration to such features as proper filtering of the air through efficient strainers and including other design features that have proved satisfactory in the AB valve.

In order to determine the condition of the parts of this equipment, after various months of road service, eight member railroads have agreed to participate in extended tests which will involve approximately 150 cars. These roads operate in all sections of the United States so that various climatic conditions will be encountered. This test program has been discussed with the director of the Bureau of Safety of the Interstate Commerce Commission and is also being actively participated in by the air-brake manufacturers.

The purpose of these tests is to determine the proper periodic cleaning time for this type of equipment and the fact that all equipment under test was given a complete test and inspection before being sealed indicates that reliable data will be obtained by the sub-committee which is closely following the tests. Over 100 of these cars are now sealed and operating in service, some of which are almost due for their first inspection after 18 months of service.

This is submitted as information and a report of progress. A complete report will be prepared at the expiration of all tests with our recommendations.

AB Brake Piston-Sleeve Lubrication

The present design of AB brake-cylinder non-pressure head is a construction of pressed steel having a felt swab and grease for lubrication of the piston sleeve, with three brass rings for excluding dirt from the cylinder past the piston sleeve. This construction has not proved entirely satisfactory from a maintenance and operating standpoint and the air-brake manufacturers have designed an improved non-pressure head for this type of cylinder that has been in test service on one member road since 1938, and on another since 1940.

The improved non-pressure head differs from the present standard as follows: (a) Cast-iron has been substituted for pressed steel. (b) Felt packing has been substituted for the metal seal rings around the hollow sleeve and is held firmly against the sleeve by the compression of the piston release spring exerted through a follower. This felt ring is saturated with oil at the time of application to lubricate the hollow sleeve. (c) A cast tubular projection, extending slightly into the cylinder, restricts vertical vibration of the piston release spring, thus preventing the spring from contacting the hollow rod, and hereby marring it. This particular feature will overcome the condition mentioned by this committee in our report of April 28, 1941, as observed on the inspection and test of AB freight brake equipment on the Pennsylvania and the Santa Fe. Grease grooves for pressure lubrication of the packing cup have also been omitted as they did not prove practical and were never used.

The manufacturers advise that there will be no increase in the cost of the improved non-pressure head over the present pressed-steel head in complete AB brake equipment or complete AB brake cylinders.

It is recommended that this improved design of non-pressure head for the AB brake cylinder be approved and the manufacturers be immediately authorized to proceed to manufacture it.

Pipe Failures and Pipe Clamps

The investigation of broken pipes on freight cars by the joint sub-committee of the Car Construction Committee and this committee indicated that sufficient stress has not been given to the proper installation of the pipes when they were applied to the car.

In line with past practice of using the air brake manufacturers' maintenance instruction pamphlets, in which no changes are made without this committee's approval, it was suggested that their specification No. 2518 covering the installation of the AB freight-car brake equipment be reviewed with the intent of treating it in the same manner as the maintenance instruction pamphlets.

The joint sub-committees have reviewed this specification and have made many recommendations therein to conform to A. A. R.

requirements. They also recommend certain changes in the various plates of the supplement to the A. A. R. Manual in which the committee has concurred with certain slight modification.

The only confliction in the revised Specification No. 2518 with present A. A. R., recommended practice is that shown on Page E-15, Par. 6 of the manual, wherein it specifies that the retaining-valve pipe should be supported by clamps not to exceed 6 ft. apart, adopted in 1899. Present car construction does not readily lend itself to this dimension and a dimension of 8 ft. or less is recommended, this recommendation being concurred in by the Committee on Car Construction.

Curtailment of the Use of Rubber

From time to time we have received suggestions for the use of an extended nipple on air-brake train-line hose with a hose shorter than standard in order to conserve rubber. We have endeavored to retain the standard length of air brake hose (22 in.) in order to obtain the necessary flexibility and avoid excessive leakage at the hose coupling under various draft-gear conditions by setting up a method of splicing hose which has aided considerably in the conservation of rubber. Tests conducted by one member road with an extended nipple on a shorter than standard hose, but having an overall length over coupling and nipple as standard, definitely proved that this method should not be permitted, as a partial passing of the couplers can move the angle cock to such an extent that the short length of hose coupled therewith can interfere with proper operation of the brake equipment.

The most outstanding change in equipment for conserving rubber is that of locating the angle cock in the present A. A. R. standard preferred location and it is recommended that this be done whenever conditions permit.

Parts for AB-4-12 Brakes

A considerable number of freight cars are in service equipped with the AB-4-12 brake equipment some of which are transporting critical and essential material. It is important that such cars should not be delayed in case of failure to any of the essential parts of this equipment. It is recommended that individual railroads carry such repair parts in stock as are necessary to protect the operation of cars so equipped over its line without unnecessary delays. The primary difference between the AB-4-12 and the AB-10 equipment consists only in the additional transfer valve and a combined 4-12 brake cylinder instead of a 10-in. cylinder.

The report was signed by R. E. Baker, chairman, principal road foreman, general supervisor of air brakes and train control equipment, B. & M.; J. P. Lantelme, vice-chairman, general foreman, Pennsylvania; W. H. Clegg, general superintendent of motive power and car equipment, G. T. W.; T. L. Burton, air brake engineer, N. Y. C.; C. H. Rawlings, superintendent of air brakes, D. & R. G. W.; R. J. Watters, general air brake inspector, Nor. Pac.; O. H. Swan, supervisor air brake instruction, Union Pacific; R. E. Anderson, general air brake inspector, C. & O.; A. J. Pichetto, general air brake engineer, Ill. Cent.; R. N. Booker, general air brake inspector, Sou. Pac.; F. T. McClure, supervisor air brakes, A. T. & S. F.; H. I. Tramblie, air brake inspector, C. B. & Q.

The report was accepted and necessary items ordered referred to letter ballot.

Report of Committee on Car Construction

Progress made on designs of lightweight freight cars—Welding of all fractures in truck frames cast later than 1926 approved

E. P. Moses,
Chairman

The development of lightweight designs for general service box and hopper cars, making use of high-tensile, low-alloy steel, riveted or welded construction, in collaboration with the ARCI Freight Car Design Committee was necessarily deferred on account of the material situation, shortage of manpower, development of composite emergency car designs, and the volume of other important engineering matters to which the railroads and car builders were required to give preference in the furtherance of the war effort.

As the result of a special assignment, the ARCI is completing the design of a lightweight merchandise car for high-speed service. This car is of the box type of high-tensile low-alloy steel, welded and riveted construction, having inside length of 50 ft. 6 in., inside width of 9 ft. 2 in. and inside height of 10 ft. 5½ in. The Committee on Car Construction is cooperating in the development of this design.

With the increased availability of aluminum, greater interest is being shown in the development of hopper-car designs using aluminum alloys, with resultant reduction in weight and increase in pay load. To date, one complete design for 50-ton nominal-capacity hopper car of aluminum construction has been submitted for consideration under the provisions of Interchange Rule 3.

Composite Freight Cars

The 1943 Annual Report, Circular D. V.—1049 included a list of the composite car designs, developed in collaboration with the Freight Car Design Committee of the American Railway Car Institute.

A design of 50-ton, composite gondola car with drop ends as shown on A. A. R. drawing No. 5623-B was subsequently added to the list of general dimensions as shown below:

Inside length	48 ft. 6 in.
Inside width	9 ft. 2 in.
Inside height	3 ft. 0 in.

As a result of requests from certain Member Roads who desired to deviate from the corner post construction and sheathing application at the side sill and side plate, as shown on General Arrangement drawings for composite box cars, A. A. R. Plates 1550 and 1551, covering 40 ft. 6 in. and 50 ft. 6 in. cars, respectively, alternate arrangements were developed and circulated to member roads and car builders with the Executive Vice-Chairman's letter of Sept. 9, 1943.

These alternate arrangements, which involve the use of some additional steel, were approved by the War Production Board as substitutes for the constructions shown on the A. A. R. plates.

Specifications and drawings will be prepared covering the recommended manner of converting composite cars (particularly box and hopper) to all-steel construction at some future time when necessary materials are available.

Victory Cars

The composite car designs were continued as emergency standards until the latter part of 1943 when changes in the steel situation permitted reversion to all-steel construction to a limited extent, with the stipulation that the designs would be modified to reduce the amount of plates and sheets used. For this study, A. A. R. Standard and Accepted Designs were used as a basis, all concerned being in agreement that for cars of riveted open-hearth steel construction, these designs represent the most economical and efficient use of materials and any reduction in the thickness of plates or sizes of shapes would be at the sacrifice of strength and service life, therefore any saving in the amount of steel used would be accomplished through the substitution of rolled shapes for plates and sheets where this could be done without detracting from the strength or serviceability.

The resulting designs designated as Victory cars, after approval by the War Production Board, were released to member roads

by President J. J. Pelley, under dates of Jan. 28, and Feb. 12, 1944, and are intended to be followed until the material situation is further relieved.*

Troop Cars

The committee reported that the last of the 1,200 troop sleeping cars built by the Pullman-Standard Car Manufacturing Company and the 400 kitchen cars built by the American Car and Foundry Company, were completed in March and April, 1944.*

The emergency sub-committee and other members of the Committee on Car Construction were continually in touch with the design and building of these cars and a number of special conferences with the builders and representatives of Defense Plant Corporation, War Production Board, Office of Defense Transportation, and others, were held, including inspections and trial runs of sample cars. The emergency sub-committee also participated in the formulation of instructions governing the operation of these cars and the special equipment and facilities which it was necessary to provide.

Freight Cars Ordered May 1, 1943, to May 1, 1944

Since 1936 your committee, each year in its annual report, has made a statement of the freight cars ordered during the preceding year. Sufficient detail is given in these statements to indicate the extent to which the members were following A. A. R. standardization for these cars.

An analysis of the box and hopper cars is presented in the table, shown below.

In addition to the above cars, 640 refrigerator cars were ordered during the same period. One hundred are A. A. R. standard and 340 more include the Z-section center sills and trucks with 25¾-in. center-plate height.

Of the 5,590 gondolas ordered during the same period 2,676 are of the A. A. R. emergency designs, and an additional 1,635 of non A. A. R. emergency design have the standard Z-section center sills and truck-center plate heights of 25¾ in. Of the remainder, 1,000 have floating center sills.

Of the 1,258 flat cars ordered during the period 1,050 were of the A. A. R. emergency design and the truck center plates of the remainder were 25¾ in. high.

Orders were placed for 100 stock cars and 775 other cars of special types. All of the former were built with standard Z-section center sills and 25¾ in. center-plate height. Of the latter 275 had the standard center-plate height.

Box, Auto-Box and Hopper Cars Ordered May 1, 1943 to May 1, 1944, Classified According to Their Relation to A. A. R. Standards

A. A. R. throughout:	
Box and auto cars	10,550
Hopper	8,385
A. A. R. throughout except for variations in dimensions:	
Box and auto	3,405
Hopper	100
A. A. R. composite emergency designs:	
Box and auto	2,025
Hopper	3,520
A. A. R. composite emergency designs, except variations in dimensions:	
Box and auto	1,050
Hopper	....
A. A. R. throughout, except floating center sills:	
Box and auto	500*
Hopper	1,000
Non A. A. R., except 25¾ in. truck height:	
Box and auto	....
Hopper	3,100**

* Dimensions also vary from standard on these cars.
** 2,900 of these cars also have the standard center-sill section.

Side Frames and Bolsters

During the past year two new designs of side frames and three new designs of bolsters have been approved for use in interchange service.

One additional application for approval has been received and this application is still pending. It covers an inboard roller bearing design of high-speed truck, Grade B carbon steel, 50 tons capacity, offered by Timken Roller Bearing Company. Otherwise the list of applications pending remains the same as reported last year. Most of these pending applications continue to be so classified because the manufacturers, for various reasons, have not been ready to proceed with tests.

Waste Retainer Ribs in Journal Boxes

Application of waste-retainer ribs as shown in the 1943 annual report has been adopted as standard practice by letter ballot. Subsequent investigations indicate the desirability of making modifications in the dimensions of these ribs to avoid contact with any part of the axle under certain operating conditions. The drawing which accompanied last year's report is being revised accordingly.

All A. A. R. journal-box drawings, both integral and separate types, now included in the Manual, are being revised to incorporate the waste-retainer ribs.

Brake Beams

The subject of brake beams is now under the jurisdiction of the Committee on Car Construction and the sub-committee appointed to handle matters pertaining to brake beams and their suspensions has submitted seven recommendations, five of which are for changes in tolerances and slight changes in dimensions affecting the fit of the brake shoe in the brake head. The purpose of these changes is to decrease and control the lateral motion between the brake shoe and the brake head, reduce flange wear and lateral stress of the brake-beam suspension, and to increase the bearing of brake-shoe end stops against the top and bottom brake-head toes.

The sixth recommendation proposes to eliminate the alternate brake-shoe design because the projection at the center will wear on the flange of the wheel and decrease the lateral motion of the brake beam.

The seventh proposes the revision of the go and no-go gauge for the brake-beam strut-pin hole to suit the size of pin stock used.

Welding of Truck Side Frames and Bolsters

Upon instructions from the Committee on Car Construction and in Mr. Browning's letter of August 5, 1942, a special Sub-Committee on Welding of Truck Sides and Bolsters undertook to determine, through tests of welded cast-steel truck side frames, if the present limitation of welding cracks and fractures only when the area of crack is less than two-fifths of the area through the section at the point of fracture, as now covered by Rule 23, page 93, of A.A.R. Code of Rules, can be extended to 100 per cent fractures, welds to be performed by either the shielded-arc electrode or oxyacetylene process.

New U-section 50-ton cast-steel truck side frames, all of the same pattern, cast from the same heat and annealed at the same time, were used for these tests in order to secure comparable results. The pattern selected was one which had been previously subjected to dynamic fatigue tests.

Twelve new side frames, New York Central pattern F-6788, Symington-Gould pattern TF-5205, were selected for this test and purchased from the Symington-Gould Corporation. Examination of results of previous dynamic fatigue tests of this frame pattern showed that the weakest section was the left tension member approximately at the point where the bracket joins the journal box and tension member, and accordingly all welds in the test frames were made at this location. Six of the test frames were given 100 per cent fractures and six were given 40 per cent fractures at this location, and these frames were welded as follows:

1 frame 40 per cent weld, oxyacetylene Oxweld
1 frame 40 per cent weld, oxyacetylene Airco
2 frames 100 per cent weld, oxyacetylene Oxweld
2 frames 100 per cent weld, oxyacetylene Airco
3 frames 40 per cent weld, electric
3 frames 100 per cent weld, electric

The oxyacetylene welds were all made at the New York Central reclamation plant at Ashtabula, Ohio. Oxweld welding wire No. 32 was used on three of the frames and Airco welding wire No. 1 was used on the remaining three frames. The electric welds were made at the Erie reclamation plant at Meadville, Pa., all with Lincoln Electric Company's Fleetweld No. 3 electrode.

After welding, the frames were normalized in a car bottom fur-

* A list of the so-called Victory cars was published in the *Railway Age* of February 26, 1944, page 428.
† The troop sleeping cars were described in the *Railway Age* for September 18, 1943, page 449; the kitchen cars in the issue of November 6, 1943, page 733.

nace equipped with pyrometers by slowly and uniformly heating the castings to a temperature of from 1,500 to 1,600 deg. F., allowing two hours to bring to this temperature, and then holding at this temperature for a period of 1 hr. 30 min. The car bottom was then withdrawn from the furnace and the castings allowed to cool in still air protected from strong draft or rain. Tram measurements were taken from each side frame at the front, bottom and rear of the left tension member before the frames were cut through the section, after being cut, after welding, and after normalizing.

After the side frames had been normalized, they were returned to the Symington-Gould Corporation, Depew, N. Y., where the frames were sandblasted to remove all normalizing scale and subjected to a dynamic fatigue test under the observation of a representative of the joint sub-committee.

The first frame tested failed through the right tension member at 187,182 loadings through a crack at this location which developed at 138,600 loadings.

The next eight frames failed through transverse cracks in the top of either the right or left journal-box roof at the junction of the journal box and tension member at varying loadings.

Further Dynamic Fatigue Tests

The original welds were not disturbed or affected by any of these ten tests and it was decided to have the cracks which developed in four of the 100-per-cent weld frames, including the critical cracks at the junction of the journal box and tension member, welded and the frames returned for further dynamic fatigue tests. Accordingly, Frame Serial 1944, Test 210-F-283, and Frame Serial 1945, Test 211-F-281, were sent to the New York Central reclamation plant at Ashtabula, where the cracks were welded by the oxyacetylene process, using Oxweld No. 32 welding wire. Frame Serial 1941, Test 202-F-282 and Frame Serial 1949, Test 204-F-284, were forwarded to the Erie reclamation plant at Meadville where the cracks were welded by the electric arc process, using Fleetweld No 5 electrode. After the welding was done all frames were normalized according to the schedule above referred to and the frames returned to Depew, N. Y., for further tests.

Frame 1945, Test 214-F-285 (second test number), failed in final test through a crack developed at 72,300 loadings at the junction of the left-hand tension member and the journal-box roof; the test was discontinued at 170,254 loadings. In the first test this frame failed at the junction of the right-hand tension member and journal-box roof.

The first critical cracks in Frame 1941, Test 215-F-286 (second test number), and Frame 1949, Test 216-F-287 (second test number), developed in the right bolster columns at 108,500 and 165,000 loadings, respectively, and the tests were discontinued at 212,524 and 193,440 loadings, respectively, without complete failure of frames. Frame 1944, Test 213-F-288 (second test number), developed its first critical crack in the front wall of the right-hand tension member at 129,400 loadings and the test was discontinued at 230,060 loadings without complete failure of the frame.

In all, thirteen dynamic fatigue tests were made and in no case did any failure occur through the welds, though in Test 213-F-288 a crack developed at 129,200 loadings in a slight depression adjacent to the weld on the back flange of the left-hand tension member but had no depth and progressed only ½ in. during the remainder of the test.

Recommendations

In view of the results of these tests, it is recommended that:

1—Interchange Rule 23, page 93, be revised to permit welding of cracks, regardless of length or depth, or fractures in any U-section cast-steel side frame which bears a casting date later than 1926. The physical test requirements of A.A.R. side-frame specifications were increased approximately 50 per cent in 1926, and it is our opinion that the present limits should apply to all of the older designs.

2—Welding may be performed by either the shielded-arc-electrode electric process or the oxyacetylene gas process. For welds made by the oxyacetylene process the welding wire used shall be Oxwell No. 32 or Airco No. 1, or equivalent.

3—In the preparation of frames for electric arc or oxyacetylene welding the oxyacetylene gouging nozzle shall be used, and the frame sections to be welded shall be preheated.

4—After welding, side frames must be normalized in a furnace, using pyrometers or other satisfactory temperature measuring devices, by slowly and uniformly heating the casting to a temperature of from 1,500 to 1,600 deg. F., allowing at least two hours to bring to this temperature, and holding casting at this temperature for from 1 hr. 30 min. to 2 hrs. The casting should then be removed from the furnace and cooled in still air, protected from strong drafts, rain or snow. In no case should any casting be quenched in water or other liquid medium.

5—All side frames reclaimed by welding must be legibly stamped in accordance with Section A, General Regulations, Paragraph 7.

NOTE.—Detail data on which the above report is based is available in the office of the secretary of the Mechanical Division.

With the acceptance of the above report the Sub-Committee on Welding recommends changes in Section B, Cast-Steel Truck sides, page L-8 of the Manual, to include instructions as to the proper technique of carrying out the provisions of this report and also calls attention to the need of modifications in Interchange Rule 23 if these provisions are approved by letter ballot.

Due to the fact that a great deal of difficulty is experienced in deciphering welders' identification marking required on truck side frames, bolsters and couplers, it is recommended that Paragraph 7 of Section A of the Welding Regulations be modified by the addition of the following wording: "Surface of part to be smoothed off by grinding or other means before stamping."

If modification of Paragraph 7 of Section A of the Welding Limits and Regulations is approved, it is recommended that Paragraph (gi-9) (couplers and yokes) of Section C of Interchange Rule 23 be similarly modified.

It is believed that periodic normalizing of cast-steel truck side frames and bolsters in service under freight equipment cars when undergoing heavy repairs, would be of material benefit from the standpoint of increasing the service life of these parts. This is submitted for further consideration of interested Mechanical Division committees.

Rule 3—New Designs of Freight Cars

During the period May 1, 1943, to May 1, 1944, the following designs of freight cars have been reviewed in accordance with the provisions of the first paragraph of Interchange Rule 3 and approved for interchange service.

Defense Plant Corporation:—Design of well-type flat car, similar to design built some time ago by the Pennsylvania: Total number of designs, 1; total number of cars, 8.

Submissions to Committee on Car Construction account tank-car applications subsequent to tabulation dated May 1, 1943:

American Car and Foundry Company: (Application No. 3918)—construction of car structure, including anchorage, to be used for transporting 15 one-ton chlorine containers: Total number of designs, 1; total number of cars, 5.

American Car and Foundry Company: (Application No. 3963), construction of car structure, including anchorage, to be used for transporting 15 one-ton chlorine containers: Total number of designs, 1; total number of cars, 1.

Definitions and Designating Letters for Cars

The following definition and designation is submitted for a new type kitchen-pantry car:

DKP-A car provided with facilities for cooking and preparing food for passengers, the food to be served outside the car. The car may be one of a group operated articulatively with trucks common to the group.

The report was signed by E. P. Moses(acting chairman), engineer rolling stock, N. Y. C.; R. B. Winship, mechanical engineer, Can. Pac.; J. McMullen, consulting engineer, Erie; R. D. Bryan, mechanical assistant, A. T. & S. F.; J. A. Gower, assistant mechanical engineer, Pennsylvania; W. A. Pownall, assistant to general superintendent motive power; Wabash; C. A. Jordan, acting engineer car construction, C. & O.; L. H. Kueck, assistant chief mechanical officer, Mo. Pac.; J. K. Peters, mechanical engineer, D. & R. G. W.; H. L. Holland, engineer car construction, B. & O.; L. R. Schuster, engineer car construction, Sou. Pac.; T. M. Cannon, engineer car construction, C. M. St. P. & P., and F. J. Jumper, general mechanical engineer, Union Pacific.

The report was accepted with the exception of the proposal to eliminate the alternate design of brake-shoe in the section of the report on brake beams, which will, therefore, not be submitted to letter ballot.

Report on Locomotive Construction

Study of Diesel-electric locomotives resumed—A. S. A. standards proposed for bolt-heads, nuts and threads

H. H. Lanning,
Chairman

The development and use of oil-electric locomotives is now being handled by a sub-committee which, in order to coordinate the efforts of the Mechanical Division and Electrical Section, now includes two members from the Electrical Section. This sub-committee for the past two years has been studying various mechanical features which are common to most of the Diesel-electric switching locomotives now in service; the purpose of these studies to bring about standardization of parts. Up to the present time the studies have been devoted to truck designs. Some progress has been made in spite of the war conditions and it is expected that concrete recommendations can be presented in our next report.

The 1941 report of this committee included statistics on the assignment and cost of operating oil-electric locomotives. The work of assembling and reporting this information was temporarily discontinued with the 1941 report because it appeared that all information on the subject available up to that time had been obtained and reported; however, during the last three years the use of oil-electric locomotives has been greatly extended both with reference to the number of locomotives in service and the classes of service performed. The number of roads using motive power of this type has also increased. It is believed that further valuable data on this subject can now be obtained and it is our intention to include more information of this kind in our next report.

There are also in progress of design or development several new types of locomotives which will be powered by new prime movers such as steam or gas turbines. We expect to keep in touch with these developments and report all information of value pertaining to them.

Design of Fundamental Parts of Locomotive

Dry Pipes and Steam Pipes: In 1943 there was submitted to letter ballot for adoption a list of sizes of steel or iron tubing to be used for making dry pipes of steam locomotives. In continuance of its work on this subject, the committee expects to compile a list of standard sizes of tubing suitable for dry pipes of locomotives having front-end throttles, this list to be ready for submission in the next report.

Boiler Supports—Waist Sheets: In 1940 the committee included two drawings of center boiler supports showing all other waist sheets or supports eliminated between the frame and the boiler. These two styles have given satisfactory service; locomotives equipped with Style 2 supports have completed 6,427,867 miles and, on another road, a locomotive equipped with Style 1 has run 1,000,000 miles.

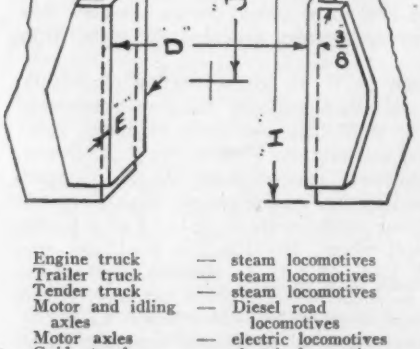
Screw Threads

Screw threads have been under investigation by the sub-committee in an effort to adopt the standards for screw fits that have already been accepted by the American Standards Association and other associations. In this year's report the sub-committee recommends that page L-27 of the Manual be changed to refer to A. S. A. standards for bolt heads and nuts, and for screw threads. The former are shown in A. S. A. Bulletin No. B 18.2 and the latter in Bulletin No. B 1.1. Inasmuch as castle or slotted nuts are included in Bulletin No. B 18.2, the committee recommends that page L-21 of the Manual be eliminated.

Pedestal Widths for Application of Roller Bearings

Letter Ballot Circular D. V.—1052 dated September 8, 1943, included as Proposition No. 11 recommendation for the standardization of pedestal-jaw openings required for friction-bearing journal boxes for steam, electric and Diesel locomotives and tenders. In announcing result of this letter ballot in Circular D. V.—1053 dated October 26, 1943, it was stated that the inclusion of this proposition in the Manual of Standard and Recommended Practice is being held in abeyance pending further consideration of certain detail by the committee. The sub-committee has agreed with the manufacturers upon certain modifications which it is felt are desirable and should be incorporated before the data is issued for inclusion in the manual and submit the following report with recommendation that the proposition be resubmitted to letter ballot in the revised form.

The sub-committee met with representatives of roller-bearing



Engine truck — steam locomotives
Trailer truck — steam locomotives
Tender truck — steam locomotives
Motor and idling axles — Diesel road locomotives
Motor axles — electric locomotives
Guide truck — electric locomotives

Nominal journal diameter, in.	D, in.	H, in.	E: Motor and idling axles on Diesel road and electric locomotives, in.	E: Tender trucks on steam locomotives and guide trucks on electric locomotives, in.	E: Engine trucks outboard, on steam locomotives, in.	E: Trailer trucks, steam locomotives two-wheel truck or four-wheel truck, in.	J, in.	Remarks
4¼	9⅜	16¼	5	5	6	..	8	..
4¾, 5	11½	18	5	5	6	..	8¾	..
5	14¾	20¼	5	6	6	..	10	‡
5, 5½	12½	18½	5	6 or 8*	6	..	9	..
5½	15½	20¾	5	8	8	..	10½	‡
5½, 6	13⅜	19½	5	8	8	8	9½	..
6	16	21½	5	8	8	8	11	‡
6, 6½	14¼	21	7	8	8	11†	10½	..
6½	16⅞	22½	7	8	8	11†	11½	‡
6½, 7, 7½	15½	22	8	8 or 10*	8	11†	11	..
8	18¾	25½	8	8 or 10*	8	11†	13	‡
7, 7½, 8, 9	16⅜	23	8	8 or 10*	8	11†	11½	..
7, 8, 9	17¾	23½	8	8 or 10*	8	11†	12	..
10	18⅝	24½	..	....	..	11†	12½	..
			For Engine Trucks, Inboard, Steam Locomotives Only					
7	16 3/16	20¾	..	....	5½	..	10¼	..
7½	17¼	20½	..	....	6	..	10½	..
8, 8¼	17¼	21¾	..	....	6½	..	10¾	..

* For six-wheel tender truck only.
† 9 in. on front axle of four-wheel truck having lateral resistance device.
‡ For SKF double row, single bearing only.

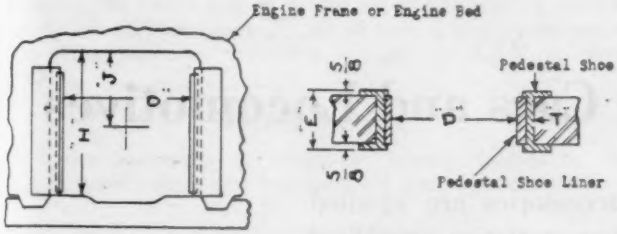
Fig. 1—A. A. R. Recommended-Practice Pedestal-Jaw Openings for Roller Bearings on Future Equipment—Engine and Tender Trucks

manufacturers who had furnished such bearings for railroad rolling stock, in order to standardize on pedestal-jaw openings.

Data submitted by manufacturers indicated that it is impractical to standardize on such openings for equipment built in the past and all pedestal-jaw openings listed are for steam, electric and Diesel locomotives as well as tenders to be built in the future.

Existing A. A. R. pedestal-jaw openings for steam-locomotive inboard engine and outboard tender trucks, as required for friction-bearing journal boxes are maintained, so that suitable roller-bearing housings may be applied. The governing A. A. R. dimension requirements for inboard engine-truck friction journal boxes for 5 inch to 8 inch nominal diameter journals, are shown on Plate 4, Section F, and for outboard tender-truck friction journal boxes for 5 inch to 7 inch nominal-diameter journals are shown on Page D-18 to D-21 inclusive, Section D of the A. A. R. Manual.

The application of roller bearings to Diesel switching locomotives was considered, and pedestal-jaw openings as developed for respective diameter journals of Diesel road locomotives may be suitable for Diesel switching locomotives; however,



Nominal journal diameter, in.	D, in.	H, in.	E: With 6-in. thick pedestal jaw (engine bed or frame), in.	E: With 7-in. thick pedestal jaw (engine bed or frame), in.	T, in.	J, in.
10*	19⅞	25	7¼	8¼	1	12¼
10†	16¾	23¼	7¼	8¼	¾	11⅞
10½*	20⅜	25¾	7¼	8¼	1	13⅛
10½†	17¼	23¾	7¼	8¼	¾	12⅛
11*	21⅜	26½	7¼	8¼	1	13½
11†	17¾	24¼	7¼	8¼	¾	12⅜
11½*	21¾	27½	7¼	8¼	1	14
11½†	18¼	24¾	7¼	8¼	¾	12⅝
12*	22⅜	28	7¼	8¼	1	14¼
12†	18¾	25¼	7¼	8¼	¾	12⅞
12½*	23¾	29	7¼	8¼	1	14¾
12½†	19¼	25¾	7¼	8¼	¾	13⅛
13*	25	30¾	7¼	8¼	1	15⅝
13†	20½	27	7¼	8¼	¾	13⅜
13½*	26½	31¾	7¼	8¼	1	16½
13½†	21¾	27¾	7¼	8¼	¾	14⅛
14*	26⅞	32¼	7¼	8¼	1	16⅜
14†	22½	29	7¼	8¼	¾	14¾
14½*	27⅝	32¾	7¼	8¼	1	16⅝
14½†	23	29½	7¼	8¼	¾	15
15*	27¾	33¼	7¼	8¼	1	16⅞
15†	23½	30	7¼	8¼	¾	15¼

* For Timken single-row or SKF double-row, single bearing.
† For Timken double-row bearing only.

Fig. 2—A. A. R. Recommended-Practice Pedestal-Jaw Openings for Roller Bearings on Future Equipment—Steam-Locomotive Driving Axles

smaller pedestal openings may be satisfactory because of the lower speeds of switching locomotives.

Pedestal-jaw openings for electric-locomotive motor axles are the same as for Diesel-road-locomotive motor axles, it being understood that later on, different types of electric or other drives developed may require changes in journal diameter and pedestal-jaw openings.

Pedestal-jaw openings for tenders may be suitable for passenger-car roller bearings having 4¼ inch to 7 inch nominal-diameter journals.

Figs. 1 and 2 cover recommended pedestal-jaw openings for equipment to be built in the future.

The letters on the drawings refer to the following: D—Opening between pedestal-jaw liners; E—width over pedestal-jaw liner flanges; H—minimum height of pedestal-jaw opening; J—center of axle to top of pedestal-jaw opening.

Relative tolerances for pedestal-jaw openings, except driver pedestal-jaw openings, a tolerance of $+\frac{1}{16}$ inch, or $-\frac{1}{32}$ inch, is desired between pedestal-jaw liners for openings D, and the same tolerances for width over pedestal-jaw liner flanges E.

Distance between locomotive frame or truck frame (cast or open-hearth steel) pedestal jaws is dimension D plus thickness of liners as indicated. If wedge-type liner is used, the pedestal jaw is to be tapered. Width of locomotive-frame or truck-frame (cast or open-hearth steel) pedestal jaw is dimension E minus the thickness of the liner flanges as indicated.

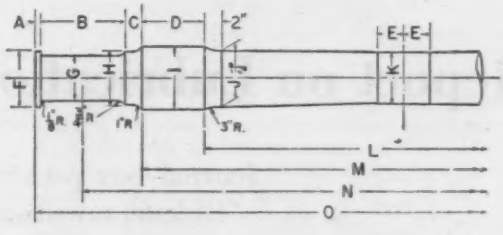
The two illustrations show nominal journal diameters for axles and actual journal diameters may vary slightly from the nominal diameter as indicated.

Investigation developed that there are at present approximately 220 different pedestal-jaw openings which have been reduced, on equipment to be built in the future, to 65 different openings.

Driver and Trailer Tires

In 1941, the Locomotive Construction Committee made recommendations as to the shelling of trailer tires. It was recommended that heat-treated (quenched or tempered) tires be used to overcome shelling. This recommendation was made after four years of tests.

Several of the roads mentioned in the 1941 report have followed the committee's recommendation and have reported con-



CLASSIFICATION OF AXLE	SIZE OF JOURNAL	DIMENSIONS A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
G	7"X13"	7/8	13"	2¼	8⅛	3"	8½	7"	8½	9⅜	8⅛	7⅛	3'-10¼"	5'-2½"	6'-8"	7'-10⅝"
H	7½"X14"	7/8	14"	2¼	8⅛	3"	9"	7½"	9"	9⅜	8⅛	7⅛	3'-10¼"	5'-2½"	6'-9"	8'-0⅜"

Fig. 3—Axles Proposed for Engine, Trailer, and Tender Trucks

siderable success. One road, for example, reports that prior to the use of the heat-treated tires the average mileage per shelled-out tire was 114,000, the present mileage with heat-treated tires is 5,800,000.

The reports of these roads are covered in detail in the report.

Fusion-Welded Locomotive Boilers

The original fusion-welded boiler on the Delaware & Hudson is still operating and giving satisfactory service.

Some time ago a design was submitted by the Chicago, Milwaukee, St. Paul & Pacific for a fusion-welded boiler for one of its F6 Class 4-6-4 type locomotives. Permission has been given by the Director of the Bureau of Locomotive Inspection to construct a boiler of this design. This work is now being done by the Milwaukee at its shops at Milwaukee, Wis. After this boiler is completed it is to be stress relieved. In other words, they are following the same procedure that was followed in the construction of the D. & H. boiler.

Since the construction of the D. & H. boiler, there have been built and placed in service six furnaces for stress relieving boilers, and a seventh one is contemplated.

Research—Axles, Crank Pins and Bearings

In its work of developing and testing axles for passenger cars and tenders, the research committee on axles, crank pins, and bearings has developed axles of sizes 7 inches by 13 inches and 7½ inches by 14 inches which are suitable for use under high-speed passenger cars and locomotive tenders. The dimensions and designs of these axles are shown in Fig. 3 and their adoption for locomotive tenders is recommended. They are also recommended for use in engine trucks and trailer trucks of the outboard bearing type in which axles of these sizes can be used.

Stresses in Locomotive Rods and Motion Work

The sub-committee recommends that Page F-117 of the Manual

covering side-rod knuckle-joint design be eliminated because it shows a formula for thrust or load which conflicts with the formula shown on Pages F-10 and F-11, adopted as recommended practice in 1941, and because the design shown on Page F-117 has become obsolete.

Tolerances for Cotter Keys

A. A. R. Circular No. D. V.—986, issued May 27, 1940, Exhibit I, page 61, contains a report in which it was recommended that no change be made in existing standards, but where a tighter fitting cotter is desired, some form of expanding cotter be used.

The report contained a drawing showing a type of cotter which is available, free of royalty, to any member railroad. This cotter has one leg crimped, insuring a tight fit in the cotter-pin hole.

Pressure Gauges for Locomotives

The War Production Board found it necessary to require the manufacturers of pressure and vacuum gauges to curtail the assortment of gauges heretofore offered for sale. Representatives of this committee collaborated with WPB and representatives of the manufacturers in determining the types and sizes of gauges considered essential for locomotives. WPB Limitation Order L-272, effective February 10, covers those now available.

The report was signed by H. H. Lanning (chairman), mechanical engineer, A. T. & S. F.; E. L. Bachman (vice-chairman), general superintendent motive power, Pennsylvania; F. E. Russell, chief mechanical engineer, So. Pac.; Frank Williams, chief mechanical engineer, Can. Nat.; A. G. Hoppe, assistant to mechanical assistant to chief operating officer, C. M. St. P. & P.; G. W. Bohannon, assistant to chief mechanical officer, C. & N. W.; J. E. Ennis, engineering assistant, N. Y. C.; J. B. Blackburn, mechanical engineer, C. & O.; L. H. Kueck, assistant chief mechanical officer, Mo. Pac.; W. H. Sagstetter, chief mechanical officer, D. & R. G. W., and K. Cartwright, chief mechanical engineer, N. Y. N. H. & H.

The report was accepted and necessary items ordered submitted to letter ballot, except the section on Standardization of Pedestal Widths for Application of Roller Bearings, which was referred back to the committee for further study.

Report on Lubrication of Cars and Locomotives

Journal-box packing and accessories are studied —Rule 66 rewritten—Hot box statistics assembled

J. R. Jackson,
Chairman

The last published report of the committee was made in 1941; brief mimeographed reports have been made to the General Committee during the past two years. In this report, only such subjects as hold general interest or require action by the membership are covered.

Interchange Rule 66

(1) *Methods of Packing Journal Boxes.*—A revision of the standard specification for Journal Boxes, Standard Method of Packing, resulting from a year and a half of study is attached as an appendix to the report. It is largely a rearrangement of present instructions in the interest of continuity, the rewording of some sections and revision of others to incorporate the practices agreed to by the committee as conducive to best general practice for packing journal boxes on cars in interchange service. It is recommended that the revision be submitted as a letter ballot item. A mixture of 50 per cent new and 50 per cent renovated waste is recommended for packing with Specifications M-904, M-905, M-906 and M-910 remaining as the minimum requirements for the materials used in making up journal packing. Preparation of packing is to be as before with the exception that prepared packing in storage containers is to be turned over at least every 5 hours instead of every 24 as under the previous reading of the rule. If the packing is not turned over oil in the bottom of the container must be drawn off and poured over the top of the packing. The cleaning of journal boxes before packing is dealt with and the use of dust-guard plugs required in addition to the closely-fitting box lids and dust guards previously mentioned in the rule. Packing procedures still prohibit the use of machine-made back rolls and, in addition, rolls tied with twine. The use of free oil in such boxes as do not appear to contain sufficient oil after boxes are repacked is also required.

Mandatory Repacking Time

(2) *Periodic Repacking of Journal Boxes—Increase in Time for Mandatory Repacking.*—The matter of changing the present mandatory repacking from 15-14 to 18-17 months was intensively studied, as was the question of billing change from 9-14 to 12-17 months. The results of a survey conducted by the committee in June and July, 1943, are reported.

(3) *Clarification of Section (j), Item 4.*—This provision is not to be applicable to bearings worn through at the fillet end only and the language is changed to read, "(4) when lining is worn through to brass, crown and sides only."

Monthly Freight Car Hot-Box Statistics*

Month	Total freight car mileage			Total car set-outs†			Average miles per set-out†		
	1942	1943	1944	1942	1943	1944	1942	1943	1944
Jan.	No Record	2,999,962,588	3,293,864,472	No Record	7,760	5,978	No Record	386,593	550,999
Feb.	"	2,865,616,217	3,174,542,468	"	8,698	6,442	"	329,456	492,788
March	"	3,272,300,869		"	9,067		"	360,902	
April	"	3,233,014,225		"	8,545		"	378,452	
May	"	3,412,690,321		"	11,598		"	294,147	
June	"	3,231,415,378		"	19,625		"	164,658	
July	"	3,430,981,134		"	21,313		"	160,981	
Aug.	"	3,462,317,281		"	18,296		"	189,239	
Sept.	3,191,618,297	2,401,363,195		13,941	12,203		228,938	278,732	
Oct.	3,402,371,306	3,475,645,092		9,204	7,945		369,662	437,463	
Nov.	3,172,846,122	3,222,709,578		5,833	5,081		543,948	634,267	
Dec.	3,026,680,774	3,182,786,375		5,237	4,968		577,942	667,532	
Total		38,190,802,253			135,099			4,282,422	

*As reported by the Association of American Railroads.
†Account hot-boxes.

Roller-Bearing Lubrication

Progress has been made in arranging for laboratory tests of roller-bearing lubricants which will be subjected to full journal load at speeds up to 100 m.p.h. with characteristics studied over a temperature range from sub-zero (starting) to 100 deg. F.

Journal-Box Lids

Revision of Specification M-120, Journal Box Lids, has been receiving study and it is planned to forward a revised specification to the General Committee with recommendation for submission to a letter ballot during the coming year.

Journal-Box Packing—Retaining Devices

The Committee has kept in touch with developments in the use of devices suggested for holding packing in place and preventing waste grabs and member roads using them are encouraged to keep them in service to determine service life. However, no conclusions have been reached warranting recommendations for the mandatory use of such devices or the adoption of any device or devices of this class as A.A.R. standard practice.

Hot-Box Statistics

Monthly statements of freight-car hot-box records on all A.A.R. member roads have been compiled since September, 1942.

Dust Guards—General

Revision of Specification M-903, Dust Guards, recommended in 1941 has since been adopted by letter ballot. Much trouble has been experienced with dust guards on tank cars and the matter was handled by a circular letter to members and private car owners under date of April 24, 1944.

Hot Boxes—Causes and Prevention

This subject was studied and is continued on the docket as a live subject. A detailed report to the membership was circularized by the Executive Vice-Chairman under date of July 21, 1943. The Committee feels that the success of any program for controlling hot boxes is essentially dependent on advance preparation involving adequate supervision and working force at key points on each railroad and follow-through with more thorough checking and servicing of all boxes at these key points during the summer period.

Accidents Due to Burned-Off Journals

The Committee has given extensive study to the problems involved in this subject and have made recommendations looking to their solution. Briefly, these recommendations cover the carrying out of a research program involving study of the phenomena of serious overheatings culminating in burned-off journals and hot-box alarm devices for indicating such condition to train or engine crews before burn-offs develop.

The report was signed by J. R. Jackson (chairman), engineer of tests, Mo. Pac.; L. B. Jones (vice-chairman), engineer of tests, Pennsylvania; P. Maddox, superintendent car department, C. & O.; A. J. Pichetto, general air-brake engineer, Ill. Cen.; W. G. Aten, mechanical inspector, lubricating matters, C. B. & Q.; J. Mattise, general road foreman of engines, C. & N. W.; J. W. Hergenhan, assistant engineer, test department, N. Y. C., and, D. C. Davis, lubrication supervisor, A. T. & S. E.

The report was accepted and necessary items ordered referred to letter ballot.

Development of Reciprocating Steam Locomotive

Joint report of Committee on Relations between Track and Equipment, Locomotive Construction, and Counterbalance Standards out in July

J. M. Nicholson,
Chairman

The activities of your committee since the last meeting of the Association have been confined largely to counterbalance tests of locomotives for high-speed service, which resulted from road tests recommended and sponsored by this committee in conjunction with the Committee on Relations between Track and Equipment, the Committee on Locomotive Construction, and the Committee on Locomotive Counterbalance Standards. The results of these tests are covered in a joint report of these committees, and will be available to the member roads about July, 1944. The Manual of Recommended Practice for Counterbalancing Locomotives is being rewritten to embody the information gained from the study of the test data obtained through road tests, and the revised Manual of Recommended Practice will be available the latter part of 1944.

A great deal of development work is being carried on by the individual railroads, and your committee has closely followed these developments, but on account of other urgent work, has been unable to get together to make formal investigation and render a report. Some of these developments are as follows:

1—Study of existing locomotives and improvements in counterbalance that can be made by application of results now available from recommendations shown in counterbalance manual.

2—Improved cylinder design to effect economy in the use of steam, and increased capacity of existing locomotives.

3—Improved performance resulting from proper valve applications.

4—Improved drafting of locomotives.

5—Improved combustion of locomotives having to do with overfire air, design of locomotive fireboxes and grates, and pulverized coal.

6—Improved materials that are, and will be available for locomotive construction.

7—Improved availability for service of new, as well as existing locomotives.

One of the major locomotive developments under way is on the Pennsylvania Railroad, with the 4-4-4-4 type four-cylinder passenger locomotives, which are capable of handling 880 trailing tons at 100 miles per hour on level tangent track. The results of tests and development of this power will be studied by your committee during the coming year.

The report was signed by J. M. Nicholson (chairman), assistant to vice-president, A. T. & S. F.; W. I. Cantley (vice-chairman), mechanical engineer, Mechanical Division, A. A. R.; W. R. Hedeman, engineer tests, B. & O.; J. E. Ennis, engineering assistant, N. Y. C.; C. K. Steins, mechanical engineer, Pennsylvania; Lawford H. Fry, director of research, The Locomotive Institute; A. J. Townsend, mechanical engineer, Lima Locomotive Works, Inc.; R. P. Johnson, chief engineer, Locomotive Division, Baldwin Locomotive Works; J. E. Davenport, vice-president, Engineering, American Locomotive Company, and E. G. Bailey, vice-president, Babcock & Wilcox Company.

The report was accepted.

Purchases and Stores Division

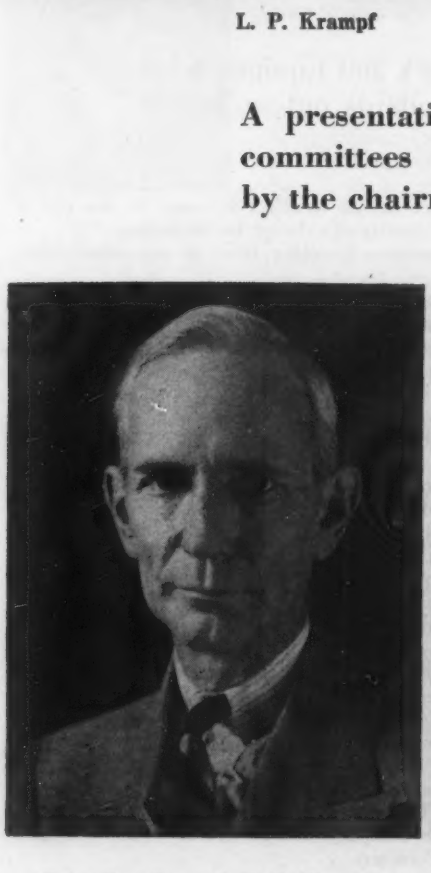
L. P. Krampf

Convention in Print

FOLLOWING the abrupt postponement of the annual meeting of the Purchases and Stores division, A. A. R., that was to have been held in Chicago, on June 22-23, *Railway Age,* in cooperation with the Division's officers and members of the General Committee, presents herewith a "convention-in-print" for this division—in the form of a digest of the reports which were to have been presented at the cancelled meeting, together with several authoritative articles specially prepared for this issue.

On June 9, when C. H. Buford, vice-president, A.A.R., announced the postponement of the meeting, in compliance with the direct request of Colonel J. Monroe Johnson, director, Office of Defense Transportation, L. P. Krampf, chairman, and W. J. Farrell, vice-chairman of the division, had virtually completed all arrangements for an effective and timely program aimed directly at the wartime accomplishments of the railways and dealing specifically with many important material procurement problems. Realizing the important role that this Division plays in the procurement and conservation of railway materials,

A presentation of the reports of fourteen subject committees and five articles especially prepared by the chairman and four other scheduled speakers



Blank & Stoller Photo

Brigadier General C. D. Young

Robert S. Henry

C. H. Buford

Officers and General Committee
Purchases & Stores Division, A. A. R.

Chairman

L. P. Krampf, Supply Agent, Missouri Pacific Lines

Vice-Chairman

E. J. Lamneck, General Purchasing Agent, Pennsylvania

Executive Vice-Chairman

W. J. Farrell, Transportation Building, Washington, D. C.

General Committee

F. S. Austin, Purchasing Agent, New York Central
G. O. Beale, Chief Purchases and Stores Officer, Chesapeake & Ohio
G. M. Betterton, Purchasing Agent, Southern Pacific
O. A. Donagan, General Storekeeper, Boston & Maine
W. W. Kelly, General Purchasing Agent, Atchison, Topeka & Santa Fe
J. C. Kirk, Assistant Purchasing Agent, Chicago, Rock Island & Pacific
R. D. Long, General Purchasing Agent, Chicago, Burlington & Quincy
A. S. MacDonald, General Storekeeper, Canadian Pacific
C. H. Murrin, General Storekeeper, Louisville & Nashville
C. B. Neubauer, Assistant to President, Southern
M. E. Towner, General Purchasing Agent, Western Maryland
E. W. Walther, Acting Assistant Purchasing Agent, Baltimore & Ohio
H. E. Warren, Manager Purchases and Stores, Gulf, Mobile & Ohio

equipment and supplies, and the importance of the matters scheduled for consideration at the 1944 annual meeting (the last previous meeting having been held in July, 1941) *Railway Age* at once offered its facilities to carry forward the work of the Division by reporting the subjects which had been programmed for presentation at the postponed convention; with expressions from authoritative sources specially written for this issue.

This article, therefore, presents abstracts of the 14 subject committee reports and observations prepared specially for *Railway Age* by Chairman Krampf; Brigadier General C. D. Young, deputy director, O. D. T.; C. H. Buford, vice-president, A. A. R.; Robert S. Henry, assistant to the president, A. A. R.; and Joe Marshall, special representative, Freight Claim division—all of whom were originally scheduled to address the Chicago meeting. The committee reports represent the year's work of the subject committees and contain many specific recommendations with respect to procurement and reclamation problems. All of these reports have been released for publication with the understanding that they are subject to the approval of members of the Purchases and Stores division and will be submitted for vote by letter ballot.

Need for Normal Activity

By L. P. Krampf*

Conditions beyond our control have made it necessary to postpone the annual meeting of the Purchasing and Stores division of the Association of American Railroads, which was scheduled to be held in Chicago on June 22 and 23. Although this division has not held an annual meeting since 1941, its normal activities have been continued insofar as possible.

The subject committees for this year have submitted constructive reports covering the more important phases of purchasing and stores operation, and the information contained therein should be of value to all of us. They are being published in abstract in this issue of *Railway Age* and copies of the reports will be made available to the membership for letter ballot vote, for which I urge careful and prompt consideration.

* Chairman, Purchases and Stores division, Association of American Railroads, and Supply Agent, Missouri Pacific.

Division Activities in Wartime

The Purchases and Stores division has been of definite help to the railroads in solving many of their material problems during the last three years. The removal of our executive vice-chairman's headquarters from New York City to Washington, D. C., has been of definite advantage. If we had not had such representation in Washington, our own jobs would have been much more difficult. Our Washington office, under the direction of our executive vice-chairman, W. J. Farrell, has done excellent liaison work between the railroads and federal agencies controlling material distribution.

From information assembled by that office and passed on to the government agencies through the Office of Defense Transportation, our "claimant agency," the railroads have obtained a more equitable distribution of available supplies, and as time went on, through the presentation of data covering the need for increased quantities of materials, the railroads have been able to procure more of the supplies they require to keep their properties in operation.

The executive vice-chairman and his staff also have performed a valuable service by acting as a clearing house for information needed by our members on governmental requirements and for passing on information from the war agencies, that the membership should have.

Generally speaking, our present maintenance material situation is fairly satisfactory, with the exception of the difficulty which is being experienced in the procurement of some finished material items. It is realized, of course, that this will not be overcome entirely until the manpower situation is relieved.

Large Inventories May Prove Troublesome

Railroad inventories, as a rule, are higher, because of abnormal conditions. This is primarily the result of increased production costs and the demands of greatly increased traffic. Slow and uncertain deliveries also have contributed to this condition. Purchasing and stores officers have had the responsibility of providing materials for maintenance in greatly increased quantities over and above what has, in the past, been considered normal operation.

As the demand for military requirements decreases, we should receive more prompt delivery of railroad materials, and it may seem advisable at this time to curtail future orders to some extent and dispose of surplus, to obtain a more balanced inventory.

After the war, railroad transportation facilities will be "streamlined" to meet competition, which will come from ships, planes, trucks, buses, and pipe lines. All indications point to a radical change in equipment and materials. Steam locomotives will be more powerful. There will be an increase in Diesel power, and probably in electric locomotives. Passenger cars will be streamlined and made of lightweight metals, as will freight equipment; and there will be other improvements and developments that cannot yet be foreseen. Rolling stock and equipment are receiving severe usage and replacements of modern design, constructed with proven materials, are essential. Maintenance costs will continue to be high until this is accomplished.

If our stocks of maintenance materials are excessive, there may be hesitancy in making changes until the surplus is disposed of. Otherwise, it will be necessary to charge such obsolete material to operating expenses at a time when the income may not be able to bear the burden. At the same time, there is also an unnecessary investment in money and interest, and in the additional cost of handling those materials. One cure is the constant policing of our stocks on hand and those that are due; and while it is necessary that this be done at a time when we are still confronted with demands for materials required by peak traffic conditions, we should always anticipate the return to normal conditions.

Normal activities of the Purchases and Stores division will continue, and it expects to serve its members in the same effective manner as heretofore. I urge that all of us maintain our interest in division affairs, and solicit wholehearted cooperation in the rendering of future subject committee reports. The measure of benefits reflect to the individual railroads in proportion to the interest evidenced by the members.

Coming Problems Appraised

By Brigadier General C. D. Young*

The necessity of having railroad equipment and facilities available to meet every transportation requirement of the military prompted the cancellation of the annual meeting of the Purchases and Stores division, A. A. R., originally scheduled to be held in Chicago, on June 22-23. The division is to be congratulated upon this patriotic action, in line with the suggestion made by the director of the Office of Defense Transportation.

The membership of your division has been kept currently informed through Washington headquarters on all matters of importance, which provided a basis for the discussion of such problems at the few group meetings held during the war period. The supply departments of the railroads have had the benefit of many years of excellent work by their committees and, as a result of such preparedness, were able without difficulty to adapt their practices, where necessary, to wartime conditions. In line with all other industries, we have had to make some changes in former practices and some substitutions for materials that have gone to war.

Railway Plants Wearing Out Fast

The Office of Defense Transportation, as "claimant agency" for the transportation industry, has developed, presented, and defended material requirements before the War Production Board, and it is generally agreed that maintenance requirements, except for new replacement rail, have, under the existing conditions, been reasonably met. It is realized, however, that the plant is wearing out faster than it is being repaired or replaced, and this constitutes one of the most immediate and urgent problems for the post-war period.

There is every indication at this time that the railroads will receive, during the current year, a greater tonnage of new replacement rail than during either 1942 or 1943. It is expected that the production of lumber and other forest products during 1944 will be substantially below the anticipated requirements of all agencies. In an attempt to meet this situation, the W. P. B. has devised a plan embodied in Order L-335, as amended, which it believes will direct lumber into the channels where it is most urgently required. This office has indicated its acceptance of the new order for a trial period only. This office will recommend to the Association of American Railroads the appointment of a small committee of lumber specialists to survey operations under the order and to develop a more satisfactory procedure, if necessary.

Because of war demands for materials, the deliveries of new locomotives and new freight cars during 1942 and 1943 were not satisfactory. Deliveries in 1944 will be substantially greater, however, and will, we hope, meet the demands of the carriers. It would not have been possible for the railroads to handle the tremendous increase in tonnage which has been handled successfully, if they had not maintained equipment in service which, under normal conditions, would have been scrapped.

Materials Needs Are Changing

A review of the completed reports which had been prepared for presentation at the annual meeting indicates that they are broad and thorough in scope, giving valuable information to every purchasing and stores officer. These reports should be studied with great care by the membership. References in these reports to revisions in the published Purchasing and Stores Department Manual should be noted carefully, particularly those which note restrictions imposed to meet war conditions. In this connection, it is appropriate to say that the use of new materials and changes in equipment construction will be accelerated as a result of the war. To meet this situation, studies should be made by each carrier of its unit inventories in relation to anticipated future uses.

Looking to the future, the personnel problem merits added attention by the railroads. Reduction in labor turn-over should be given thought, and one effective means to that end is to keep employees informed and interested in the part they play in the production of low-cost mass transportation. To the extent that interest is stirred and enthusiasm developed, the carrier gains. This opportunity has not been recognized sufficiently by purchasing and stores officers, among others. It is important, too, that the employee be interested in the quality of the materials purchased, and he should be encouraged constantly to search out and report on weaknesses in the materials used. Such information will not only assist the railroads and users, but also the manufacturers; above all, it emphasizes with the employee the importance of his job, rather than restricting interest merely to handling pieces of material.

Continued study is recommended of the curtailment or elimination of reports now required under W. P. B. and other governmental orders. I suggest the appointment of another small committee to make a study of post-war outlook, and to make such recommendations, that purchasing and stores officers may be better prepared to meet changing conditions.

The railways have faced unusual difficulties during the past several years. No department has faced more difficult problems than purchasing and stores staffs. A satisfactory solution of those problems has been vital to the continued adequacy of rail transportation for, except as necessary materials for maintenance were obtained, service would steadily decline—and, except as materials for additions to property and new equipment were obtained, the railroads would have failed to meet the heavy demands upon them. But those demands have been met—by persistence, by ingenuity, by constant vigilance. Purchasing and stores officers have answered the challenge. It is hoped that the most difficult period is past, but it is certain that difficulties are yet to be faced. Upon the basis of past performance, however, there is every reason to put full confidence in the ability of these officers to deal successfully with any emergency need that may yet arise before final victory comes.

* Deputy Director, Office of Defense Transportation.

The Job Isn't Finished

By C. H. Buford*

When the war is over and its history is written, many pages will be devoted to the brilliant wartime record of our railroads. It will be written that victory would have been impossible without the sort of railroads that America has; that no industry met its responsibilities more efficiently and effectively.

The job that our railroads have been doing since 1939, and are continuing to do, has been so tremendous that it staggers the imagination. It has been done because all concerned with rail transportation—not only the railroads themselves, but also the users of transportation, and the government—have cooperated between and among themselves. It has been done, too, because the railroaders have worked tirelessly and endlessly, and have many times overcome what appeared to be insurmountable obstacles.

Ranking high among railroaders who have done their part so successfully have been the purchases and stores people of the railroads. They have had a very difficult job to do—the job of keeping the railroads supplied with the materials they must have in order to run and the job of making the materials on hand go farther than ever before.

But so far, in spite of restrictions and ever-changing conditions, the job has been and is being done. Although the railroads have not been able to get all the equipment and materials they need and should have, the purchases and stores departments have managed to get enough to keep things going. That, to my mind, is an outstanding accomplishment in itself when you realize that our railroads today are handling approximately two and a fifth times as much freight traffic and nearly four times as much passenger traffic as they did in 1939.

But the job isn't finished, and the road ahead will not be easy. True, there have been more liberal allotments of maintenance materials, and the railroads have been given the authority to buy a little more equipment. However, until the war is over, the supply situation will be tight, and it will take continued alertness and resourcefulness on the part of the purchases and stores departments.

After the war—what then? Obviously, conditions will change

* Vice-President, Operations and Maintenance department, Association of American Railroads.

in that materials instead of being scarce, will be plentiful. But there will be new problems for the purchases and stores people—problems that will require the same sort of alertness and resourcefulness that they have exercised during these difficult days.

Out of this war are coming new ideas, new developments. There will be new materials and improvements of old ones. In order to get the most benefits from these, the purchases and stores departments of the railroads must keep in constant touch with every development. If they do this, they will be making an important contribution to the rail transportation of the future—a future to which railroad people may look with confidence.

Preventing Damage to Freight

By Joe Marshall*

The railroad claim man is most interested in those who are not trying (among both railroad men and shippers), and the few who think it is the duty of the carriers to shoulder all the burden of wartime restrictions. I propose to picture our side of the problem and to enlist the cooperation of purchasing and stores officers in helping to effectuate the purpose of damage prevention. Much of our research is based upon the constructive thinking of those who study the results of handling freight. Our business is handling freight and we would be foolish indeed if we did not do it as well as we can.

Loss and damage are one measure of railroad efficiency. We cannot record failures that have been prevented, we can only try to have less. Loss and damage fluctuate with the trend of business. War conditions have cut a swath across that trend and comparisons are distorted, but a real measure of performance lies in comparing two war periods. Ton-miles in 1942 exceeded those of 1918 by 66.8 per cent but the loss and damage bill in 1942 was 42.6 per cent less than 1918. In 1943, loss and damage was 59.8 per cent less than 1919, despite an increase of 97.5 per cent in ton-miles.

We are not patting ourselves on the back, because our damage bill last year was $42,050,364. Any amount of loss and damage is bad.

Some commodities contaminate a car to the extent that certain commodities loaded subsequently are damaged unless the car is properly cleaned. The difficulty is in finding a way to post the car department as to the kind of cleaning that is required. Damage usually springs from combinations of events which ultimately result in trouble. Recently, we ran down a serious case of corroded steel wire that had been loaded in a car that previously had carried salt. The salt shook down from the lining and in the presence of condensation that took place in the car, caused the damage. Oil and grease stains on car floors always have been troublesome and various commercial "sealers" are available as preventives, but none has been developed to the extent that it will actually seal and protect a subsequent load of flour.

While the major portion of loss and damage results from man-failures, we keep car men advised of the necessity for the proper design and construction of equipment. The freight car is a container on wheels. It is a much better container than those it usually carries, especially today, yet people are always trying to make changes in the freight car.

For example, cars with inside lining formerly had vents near the floor to permit the escape of grain trapped behind the lining; because these vents were so large that they caused snagging of sacked goods, they were made smaller to reduce this hazard and suddenly we found them closed completely. This produced "clear record grain losses," because of failure to discover grain trapped behind the lining. The same condition occurs in the end lining of corrugated ends of cars which also provide housekeeping quarters for weevils which finally infest flour subsequently loaded in these cars. These are among the factors that receive attention by claim and damage prevention men.

The prevention man must be on the alert at all times and he must have the help of every railroad department. It is no answer to say that the claim man satisfies these losses with vouchers. Vouchers do not replace lost or damaged articles. Labor and additional material can be put to better use, particularly in these war days. The claim and prevention man must do all he can to prevent failures of all kinds.

We have known for a long time, that vibration is a large factor in damage. Train speeds have been increasing progressively for more than 20 years. Freight cars are now being equipped with snubber springs which help, but practically all of the damage to freight involves light weight commodities, most of which, in a carload, weigh less than the body of the car in which they are loaded. That is like hammering them on a concrete floor.

Containers must be constructed to meet this situation and they must be loaded in a manner to withstand high speed. Loading is the most important because poor containers well loaded will ride better than good containers poorly loaded.

Since railway purchasing and stores departments are among the largest shippers and receivers, they can help promote good practices in their dealings with industry. Poor shipping practices should be drawn to the attention of shippers immediately and suggestions should be forthcoming of means to prevent damage and loss. The wide distribution of illustrations showing both improper and proper containers and loading methods has been effective. With the release of metal strapping shippers should be urged to use it particularly to protect second hand and deteriorated shipping containers.

* Special Representative, A. A. R.

Public Relations Opportunities

By Robert S. Henry*

Relations of the railroad industry with the public are the product of the contacts of railroad men and women of every kind and calling with the whole public. "Public relations" is not something that can be turned over to a public relations officer or a public relations department. Good public relations call for good and friendly contacts all the way through the industry—in the performance of service, in correspondence, in every sort of dealing with the public.

Looked at from that point of view, no group on the railroads is in any better position to help improve the relations of the industry with the public than are those of the Purchases and Stores departments.

You are the bridge, the point of contact, between those departments of railroads which use materials, supplies, appliances and devices of every sort in the production of the one thing we have to sell—transportation service—and the manufacturers and suppliers to whom we look for the vast variety of things the railroads must have.

As the point of contact between those who make the things the railroads use, and those who use what the railway supply industry makes, railroad purchases and stores people are in a position of the most unusual opportunity to help make plain to the public the essential facts about their industry.

The essential story of the railroads in our generation has been that they are enterprising and progressive, that they have done and are doing an essential task on a scale which no other form of transportation even approaches, and that they are doing it far better than most people realized even a short while ago.

It is important not only that the railroads shall continue to do their jobs, but, also that the public shall continue to understand the nature of their work, and to appreciate the scale on which, and the ability with which it is done. Unless the public at large realizes both the essential character of railroad service, and the enterprising and progressive way in which the railroads are meeting the demands that are being made upon them, we cannot hope for that understanding and appreciation which is the foundation of good relations between the industry and the public.

Too often, even those who look upon themselves as friends of the railroads are led to disparage what the railroads are doing, and how they are doing it, in the supposed interest of the wider adoption and use of some particular device, apparatus or method. This understandable zeal sometimes leads to expressions of impatience at what is conceived to be the slowness of the adoption of some favored appliance. Among those who know the general situation, such impatient zeal does no harm, but its expression leads, in many cases, to an impression among the uninformed public that the railroads are laggard in research and resistant to

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progress. Those who see the railroad picture as a whole, and who can compare and measure results, know how little truth there is in this impression, sometimes unwittingly propagated by friends of the railroads and sedulously spread by those who do not have the welfare of the industry at heart.

Those who know the whole story of railroad research—its scope and sweep, the infinite pains necessary to fit new devices into the framework of railroad operations, the care and thought that are devoted to research—those who know, understand. To those who do not know, we can only present the true and final test—results.

The railroads have more than doubled their transportation output in the last 25 years, with nearly one-third less equipment, with 500,000 fewer men, and with none of the general congestions and delays of a quarter of a century ago. They have cut the accident rate to a small fraction of what it was, and have improved the dependability of the service immeasurably. With such a record as that, the railroad industry stands before the world as essential, enterprising and progressive—and the purchases and stores people of the railroads can do much to help secure a better public understanding.

Report on Scrap

By J. J. Collins, Chairman*

After pointing out the vital role of scrap in war, the committee report on scrap, handling and preparation, classification and sale reviewed the efforts of the railways in the national scrap drives. With a complete organization headed by salvage directors and scrap committees on every railway, large supplies were uncovered and collected to meet the huge requirements of the steel mills. Furthermore, the completion of many government projects has lessened the demand for relay rail and attachments, with the result that substantial tonnages of light weight rail and fastenings have been made available for scrap.

Members of the committee, representing individual railroads, met on several occasions with representatives of the O. P. A. at their request to discuss the A. A. R. classification of scrap, scrap price changes, and shortages. The committee also suggested A. L. Prentice, manager, scrap and reclamation of the New York Central System, who was subsequently appointed railway representative on the O. P. A. scrap advisory committee.

As the result of a thorough study of the existing A. A. R. Classification for Ferrous Scrap, many additions and changes have been made in its wording, with the approval of the O. P. A., and were presented with the report as well as a complete revision which appeared as Appendix No. 1.

Delays to Cars Loaded With Railway Scrap

The report stressed the need for the prompt release of cars loaded with scrap and pointed out that excessive delay has resulted by reason of the fact that demurrage is not assessed on scrap shipments since they are considered exempt under Rule 1, Section B of the demurrage tariff. Although scrap is now allocated by W. P. B. and not sold by competitive bids, the report asserts that this practice should not deter the railways from incorporating terms of sale in notifications of awards on scrap sold under such allocations.

Committee investigation revealed that few roads are printing the rules governing detention charges on shipments of company scrap material and that some are merely showing "Car Service Association Rules to govern." After consultation with representatives of the Operating-Transportation division, A. A. R., the committee determined that the terms of sale should be governed by the National Code of Car Demurrage Rules, and its report recommended that all roads be governed accordingly.

After a survey of the handling costs of a number of railroads, the committee reported that no reasonable comparison of costs could be made. Cost figures have increased considerably in the last five years, because of increased wages, penalty overtime, new help, insufficient help to avoid second handling, preparation of a greater number of items of scrap, hurried unloading to release cars, and the saving of additional material.

* Supervisor of Scrap and Reclamation, Erie Railroad.

Among the exhibits presented by member roads and included in the report as information were: (a) a press for mashing steel drums, (b) power lift platform skid trucks, (c) power lift fork trucks, (d) scrap pans with legs for use with power trucks, (e) a gasoline-powered electric generator set for locomotive cranes and (f) small alligator shears for stripping iron and other foreign materials from brass and copper.

Among the methods for preparing some special items of scrap, the report offered the following for consideration: (a) Cast steel wheel centers and some large steel castings can be prepared by notching the piece to be cut with the cutting torch and using a crane and magnet to pick it up and drop it to the ground, causing it to break in many pieces. (b) Locomotive tires can be prepared by notching with a cutting torch on the flange side of the tire at points to be cut and handling as above, and (c) Rail can be prepared to short lengths by notching one leg of the base cutting torch, permitting the cut to extend through the web to the opposite leg of the base and handling as above.

Handling Scrap at Point of Origin

There is no question that some grading and direct loading of heavy tonnages of certain items can be accomplished at a saving. Many roads are taking advantage of this and are handling freight car axles, car wheels, flues, rail and plates and trimmings and borings and turnings (from large shops) direct from points of origin to the markets. The handling of miscellaneous scrap at point of origin requires study on the ground and consideration of the quantities produced, location of markets, hauls necessary, changing of repair programs, and last but not least, the saving of good usable materials for use in present or modified form. This would also require considerable education of a larger number of men in the handling of scrap and constant policing at many points. The report recommended that each road continue to study its own operations in order to reduce the number of handlings as much as possible.

By reason of the serious shortage of labor for scrap operations, several large roads are hiring women who are engaged in (1) Sorting small items such as track bolts, spikes, nuts, rail anchors, etc., (2) Sorting and piling lighter items for reclamation and shipment, (3) Miscellaneous clean-up work and as janitors, (4) operating power trucks, and (5) Sorting on docks where men are available to handle heavy items.

By reason of inexperienced labor, safety programs at scrap plants should be pushed with greater zeal and while no new safety equipment has been developed for scrap yards, every advantage should be taken of safety shoes, goggles and other appliances. New employees should be thoroughly instructed in the safety rules, amplifying them wherever necessary to make them fit operations peculiar to work in scrap plants. This can be accomplished best by telling and showing and repeating until the

Courtesy Erie R. R.

Small Alligator Shears Used in Stripping Iron and Other Foreign Materials from Brass and Copper

Courtesy Erie R. R.

Scrap Pans With Legs for Use With Power Trucks

employees thoroughly understand all phases of their work and attendant hazards.

Weekly meetings of foremen and their employees for short periods encourage personal desire for safety, develop hazards peculiar to their particular jobs and permit immediate action for corrective measures. This can be and has been enlarged upon by setting up teams composed of various gangs that are rated daily as to their safety record on a bulletin board. This creates competition and a further desire to work safely.

Report on Reclamation

By T. J. Hegeman, Chairman*

The committee on general reclamation is a joint committee comprising representatives of the Mechanical and Engineering division in addition to the Purchase and Stores division. Its report refers to the wide acceptance and distribution of a loose leaf book that has proved very helpful in promoting the reclamation and conservation of critical materials, entitled the "Victory Book for Reclamation," and compiled by this committee in 1942. More than 7,000 copies have gone to the railways of North America and the U. S. Government recently ordered 1,000 copies for distribution to the railways of South America.

Emergency Reclamation

The welding rules have been revised by the Mechanical section, extending welding limits on important car parts, such as coupler bodies, knuckles, holsters, spring planks, side frames, etc., in order to conserve steel. The strict conservation of all material is still necessary, making emergency reclamation of all items imperative. The roads also are doing considerable emergency reclamation on many other items, and in some cases the cost of the reclaimed item is more than the purchase cost, because of wartime conditions and inability to get new material. Since there has been some relaxation in some critical materials, the reclamation of such items that cannot be reconditioned economically should be discontinued as soon as new materials can be furnished. The report indicates that a large number of emergency reclamation practices may prove of sufficient value and dependability to warrant their continuation in the post-war period and the committee is of the opinion that these practices should be continued wherever they are economical.

Conservation of Lumber

With the lumber situation particularly acute, everything possible must be done to conserve lumber by salvaging it from dismantled equipment and buildings and using it in place of new lumber. One railroad reports a program for remodeling stations and buildings, enlarging facilities where conditions warrant, reducing the size of others to conserve heat, light and upkeep, and dismantling others that are not necessary. When buildings are dismantled or reduced in size, all good lumber is salvaged on the ground, and in many cases it is shipped to other points for immediate use in remodeling other buildings.

Several railroads have installed mills for cutting and framing salvaged lumber so as to use it to the best possible advantage. One such plant consists of a fireproof metal building, 20 ft. wide by 48 ft. long, which was fabricated in the reclamation shops from salvaged materials. The motor-driven machinery includes one tractor saw mill with a 12-ft. carriage and a 52-in. circular saw, one band saw, one 24-in. planer, one 32-in. cutoff saw and a swinging cutoff saw. All nails, spikes, and bolts are removed before the lumber goes into the mill. During the last three years more than a million board feet of lumber have been reclaimed at this mill; 225,929 ft. in 1941; 452,965 ft. in 1942 and 511,666 ft. in 1943.

Mechanical Division Activities

The report also contained a report of the committee on car construction (Mechanical division) with regard to several items that were submitted for its consideration. While in the opinion of the car committee, the design of an appropriate gage to measure the top wear of journal boxes is unnecessary, since no satisfactory method has been devised for restoring the contour of the roof of worn journal boxes, the general reclamation committee has again referred the matter to the car committee for additional consideration. This action was taken subsequent to information furnished the committee by a railroad that reports successful building up of the worn surfaces followed by smoothing with a portable grinder.

In considering wear tolerance for wheel hub wear, the car committee pointed out that studies have proved that the clearance between the hub of the wheel and the journal box is insufficient for the total lateral movement of the journal box and contained parts. An additional clearance cannot be provided in the journal box without major changes in the entire assembly which would affect interchangeability. The stresses in the rear wall are very low and so long as the wheel does not come in contact with the dust guard, it should not be condemned. When bolt holes in journal boxes, other than cast iron, have been increased ⅛-in. over the original dimensions, they may be reclaimed by welding.

In considering cast steel truck sides D-9-1932, D-10-1932 and the tolerance for wear between the bolster column of cast steel side frames, the car committee report stipulates that total wear on both columns should not exceed ½-in. If maximum wear on side frame column is to be specified, wear on the face of the bolster should also be regulated. This should not exceed ½-in. total for both sides. Present rules do not prohibit restoring holes for brake hanger bracket by welding.

The car committee also is of the opinion that if wear on truck center pins is in excess of 3/16-in., they should be restored by upsetting and surfaces should be left smooth and circular. While present rules do not prohibit welding in compression members of brake beams, the committee does not recommend that two channels be butt welded end to end, but rather that the latter be increased by welding a flat plate to one or both ends of the channel not less than 3/16-in. or more than ½-in. thick, cut out to clear the tension rod. This matter was also before the committee on brakes and brake equipment (Mechanical division) early last year. Action was that the committee saw no objection to building up lengths of brake beam channels by welding, but that another method which has been found just as satisfactory is to drop a shim in the brake head, providing the ends of the channel are properly squared.

Track Tools

The committee on general reclamation has been working for some time on the limits of wear on track tools and 13 plans, showing the reclamation limits, have been approved as recommended practice by the Engineering section. The plans include adzes, lining bars, chisel and spear end tamping bars, track chisels, spike mauls, clay and tamping picks, tie plug punches, round track punches, track shovels, and double faced sledges.

Additional Reclamation Practices

The report of the committee on general reclamation also recommended the insertion of 63 additional items in the classified list in the reclamation manual. These recommendations cover a wide range, advocating additional reclamation practices based on building up by welding, grinding and machining operations in some instances and the manufacture of many other items from scrap. In the first group the report advocates the reclamation of frog anchor blocks, cranks for switch stands, rail braces, journal boxes, piston rods for brake cylinders, stoker drive shafts, rods for water pumps and other items. Manufacturing recommendations for utilizing scrap and salvaged materials include targets and latches for switch stands, coupler bars for motor and rubble cars, farm and stockyard

* Superintendent Scrap and Reclamation, Chicago, Burlington & Quincy.

gates, pile rings and saddles, salamanders and shields for track welders, locomotive ash hoes, clinker hooks and pokers.

The use of trainmen's electric lanterns is increasing rapidly and the need of conserving batteries, especially at this time, is essential. Some railroads have installed lantern battery chargers in yard offices and trainmen's locker rooms, which increase the life of the battery approximately three times.

Another railroad reported bushing worn holes in head rods for switch points, with hardened steel bushings. The worn holes are reamed to size and the bushings are pressed in.

A machine has been designed and built by another railway for the reclamation of salvaged metal strapping used on packages and loads. The strapping is sorted by size and passed through a series of rollers which straighten and coil the strapping as it goes through the machine.

Cleaning Underground Water Lines

Several railroads reported the cleaning of underground water supply and sewerage lines by contract. This is accomplished rapidly with patented cleaning devices that travel through the pipe and remove lime and other incrustations, thus increasing the flow of water to the original capacity and reducing the cost of pumping. In one case the water supply was increased 30 per cent with a very substantial saving in the cost of pumping.

Manufactured Materials

By K. P. Guin, Chairman*

In normal times the railroads generally purchase the major portion of their material requirements from outside sources. In wartime, however, it is necessary to revise normal practices and to work out the material supply problem on the most expedient basis, i. e., supply through the medium which concurrently offers the most assurance of having what is required, when it is actually needed, through either or both channels.

Fortunately, with their extensive shop facilities, the railroads have been in a splendid position to undertake manufacturing operations that they have not resorted to in the past. Some railroad shops are engaged in manufacturing ordnance parts and equipment for our fighting forces. Cost is a secondary consideration where railroads are now manufacturing materials and parts for their own use; having the part when it is needed is the primary consideration.

Some railroads have turned away from manufacturing because of manpower and other conditions and are now purchasing materials. On the other hand, the same railroads, in sheer self-defense, have turned to manufacturing certain parts and articles which they never provided in the past except through outside purchase. For example—one railroad with an adequate foundry has, for a considerable period, manufactured its requirements of journal bearings, but recently, on account of manpower shortage, has found it necessary to buy its bearings from an outside foundry. Another railway turned, at least temporarily, to manufacturing some screw wrenches because it was unable to secure these from any outside source. A third railroad is fabricating end sills for locomotive tenders because of considerable delay in the delivery of certain steel castings. Railroads generally are now compelled to secure through reclamation, repair, substitution or by manufacturing from materials at hand, a great many items in order to fill their immediate needs for repairs to equipment and track appliances, which during normal times would be secured from the regular source of supply.

In view of the many restrictions, limitations and serious scarcities, the committee is of the opinion that normal procedures for controlling inventory and manufacturing costs in connection with the manufacture of stock materials for company use may be by-passed temporarily.

The choice between manufacturing or purchasing materials during wartime must be influenced and guided by the exigencies of the moment, i. e., by how urgently the material is needed to insure peak continuous service from all locomotives, equipment and facilities. The continuance of such a constructive policy is advisable for the duration of the war.

* General Storekeeper, St. Louis-San Francisco.

Report on Forest Products

By W. A. Summerhays, Chairman*

Many changes affecting the production and distribution of lumber have occurred since our last annual meeting. In 1941 and 1942 the armed forces used great quantities of construction timber. In May, 1942, Limitation Order L-121 was issued by the W. P. B. requiring the railroads to secure releases before sawmills could make shipments of timbers. These releases, however, were issued when proper explanations were offered and there was little difficulty in maintaining a supply of railroad timbers because of this order. General conditions surrounding lumber production, such as scarcity of labor, adverse weather, difficulty in procuring auto trucks, tires and machinery repair parts, worked constantly toward slowing sawmill production of all grades of lumber. L-121 expired in August, 1942, and was superseded by Preference Order M-208 covering the distribution of all softwoods. M-208 provided priority ratings for users of lumber, according to the importance of its use. Railroad repair lumber was placed in list A under this order, with AA2X priority. It was later eliminated from the order by a revision dated September 16, 1943.

Fir lumber was separated from M-208 in October, 1942, and placed under L-218. This order restricted producers of fir lumber from shipping unless orders were released on form W. P. B. 423, issued by the W. P. B. Lumber division office in Portland, Oregon.

The Portland office resorted to the use of inventory information from the railroads to aid in making an equitable distribution of bridge stringers among the various railroads. Many Eastern and Southern railroads were buying western timbers in competition with the Western railroads and this inventory information seemed necessary during a period early in 1943 when the production of fir lumber was not sufficient to meet the demand.

As the need of 1-in. and 2-in. lumber for packaging and shipping war materials increased, while production lessened, the W. P. B. issued Preference Orders M-361 on Southern yellow pine and M-364 on hardwoods, effective January 1, 1944, prohibiting producers from shipping lumber unless it was released on W. P. B. form 2720. As a result of a protest registered jointly on January 4, by representatives of A. A. R., the Transportation Equipment division of W. P. B. and the O. D. T., car lumber was exempted from the release provision and in Direction 4 of these orders, dated February 28, 1944, a railroad was allowed to certify its own orders for car lumber.

Before this direction could become effective, L-335 covering lumber of all species was issued on March 22, 1944, providing for reporting similar information on lumber use and inventory by all users of lumber requiring more than 50,000 f.b.m. during a quarter.

Crossties

The conditions surrounding the production of crossties are critical. Besides the loss of men to the armed forces, crosstie labor has been attracted to sawmills or other better paid employment.

Crosstie hauling is largely over rough country roads and the inability to acquire new trucks and tires has created serious difficulty in moving ties after they are made. There is also great difficulty in holding treating plant labor so that all operations concerned with the production of crossties are handicapped under present conditions.

The tremendous demand for low grade boards and 2-in. lumber for use of the armed forces has greatly restricted the supply of small logs suitable for making crossties. To induce sawmills to supply greater quantities of boards, the prices of this class of cutting have been raised to a point where it is unprofitable for sawmills to cut their logs into crossties. While tie production continues at a fair rate in most parts of the country, the total number of ties produced is not sufficient to meet the increased demands of the railroads.

The problem of distributing of the available crossties to the railroads that are most in need of them is gradually being worked out by the railroads involved. Unfortunately, because of the many different conditions under which individual railroads are

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supplied with crossties, when compared with other railroads, an inventory such as is requested by the W. P. B. Lumber division on form W. P. B. 3640 will not provide data that will make possible an intelligent or reliable comparison of the crosstie needs of one railroad with that of others. The problem of supplying crossties is obviously one which must be worked out in specific localities and between the railroads themselves.

Conservation of Materials

By J. V. Miller, Chairman*

The principles involved in the conservation of material (and that word necessarily includes reclamation in its concept), are as old as rail transportation itself. Those principles may be expressed, first, in the need for establishing and maintaining record controls which are involved in the complex system of keeping supply attuned to demand; and second, the need for adopting the most efficient methods for the handling, protection and storage of material. An antecedent of the foregoing is the creation and nourishing of the urge which will develop and encourage action, if conservation in a practical sense is to be accomplished.

Conservation transcends all phases of railroad operation. It takes innumerable forms, and applies to new as well as used material. Its weight should be felt even before material is bought. It is a condition continuously sought, but fortunately never quite attained. Its need must be recognized by all phases of management, for conservation, even in little things, creates a trend of thought which makes for economy in other ways. It pertains to the physical. It is affected by the forms of carrier organization. It includes not only good practice with respect to the use of material, but the study of methods and procedure to be sure that the needs of the service are best met and finally, a statisticial analysis of comparative costs, to determine effectiveness and service of material used.

How can purchasing and stores departments best apply the foregoing principles within their own operations? The committee pointed out that the application of those principles should include:

1. *Maintenance of adequate stock records.* Material is money. Inability to announce stocks on hand is the equivalent of not knowing the location of the bank in which company funds are deposited, while the absence of an historical record of use violates the first principle of conservation.

2. *Housing facilities which are adequate and of proper design.* Proper storage is the most important tool, and the principal investment required if the money spent for materials is to produce its worth.

3. *Orderly and consistent arrangement of materials.* Neatness and cleanliness are inevitable if full recognition is given to the value of material. Material departments should set the standard in this respect.

4. *Adoption of orderly methods to insure transfer of material between points of use, when conditions warrant, and in such a way as to accomplish safe movement.*

5. *Adoption of most effective means of shipment and transfer of material.* This would imply use of skids, pallets, barrels, bags or other containers to avoid loss or damage. Apart from the routine movement of material, in present day operations, many valuable articles are shipped on which skilled labor and the use of costly machines have been expended. A pump, for instance, fitted to exactness, may be ruined by breakage because of non-use of a means of transport particularly fitted to its need. Company material loss and damage ratios do not rise to plague material departments, but scarcity of labor and material lend emphasis to this item.

6. *Proper markings on shipments of all company material.* The railroad industry suffers the loss of innumerable man-hours due to improper marking or their absence from commercial shipments. Carriers can set the example to the shipping public in this respect.

7. *Announcement at one time, of all needs for related materials, regardless of the number of points at which it is used.* The application of quantity discounts cannot otherwise be accomplished. Despite very good performance in this respect, it is thought that careful study will produce still greater benefits.

8. *Observing principle of rotation with respect to the use of material and application of preservative where necessary.* Corrosion is the principal cause of replacement of metal. It will meet that fate soon enough. Rotation of use can be accomplished in many cases without incurring extra labor or transfer cost.

9. *Study of benefits from the use of material handling equipment.* Gouging of long-life timber, for instance, can be avoided. The mechanized means of handling material, it appears, has not yet been fully exploited.

10. *Application and observance of careful and consistent test and inspection.* This factor is the only means of maintaining a standard. Its benefits extend far beyond the identity of the material. Extension of the practice is urged wherever possible.

11. *Execution by material departments of reclamation programs wherever work schedules and other conditions will permit.* Careful inspection and test of results so accomplished are recommended to inspire confidence and cooperation by users of material. If a standard for new material is necessary, should not an equally effective standard be adopted for reclaimed material?

12. *Close and continued contact with all branches of the industry.* That contact is necessary to integrate supply with needs in the most practical and economical way.

* Manager of Stores, Chicago, Milwaukee, St. Paul & Pacific.

Report on Fuel Buying

By C. H. Hoinville, Chairman*

The fuel oil situation has necessitated constant consideration and attention and it has been the effort of the committee on fuel to obtain an adequate and equitable distribution of this commodity. Cars were supplied to roads having insufficient equipment to handle the increased quantity of fuel oil needed to meet the unusual conditions under which all of the railroads are now operating.

There was a demand for storage space and an adjustment of space already held by various railroads. Cooperation was given freely in this matter with the result the railroads are now in much better position to meet the demands placed upon them than they were in 1941. Railroad fuel oil is subject to allocation by the Petroleum Administration for War and the committee during the past year has worked very closely with P. A. W. and cooperated in monthly allocation meetings, at which this oil is distributed, in order that the Army, the Navy, the railroads and others will be best taken care of.

Diesel fuel oil stocks are being drawn on heavily and a survey is being made to ascertain what can be done to increase the quantity available for the many new locomotives that will be distributed this year. When completed, the information will be given to the P. A. W. for further action.

The committee has cooperated in decreasing the use of weed burner oils and while these are essential to operation, economy is being practiced by all, to the end that the railroads are staying within the quotas allocated by the Marketing Fuel Oil division of the P. A. W. The railroads will, if possible, use less oil for this purpose, substituting chemicals when available.

Bituminous Coal

The committee has continued its activities in connection with the supply of bituminous coal. Railroads have complied with the requests of the Advisory Council of the Solid Fuels Administration for War, on which President Pelley of the A. A. R. is the railroad representative. Ground storage of coal was adopted, even by railroads that do not customarily follow this practice, and both industry and the railroads accumulated the largest stocks of coal ever recorded above ground. This later proved beneficial, and recovery and replenishment of the piles was made as the need and availability of the coal warranted.

The wage agreement between the miners and the producers expired on March 31, 1943. Inability to reach an agreement,

* Fuel Buyer, Atchison, Topeka & Santa Fe.

together with the War Labor Board's disapproval of the proposed wage contract, resulted in four general (and several other district and individual) mine suspensions of bituminous coal production, with intervening extensions of the agreement; also seizure of the mines on two occasions by the government on presidential order. The Bituminous Coal Act of 1937, which would have expired on April 24, 1943, was extended twice, for short periods, by congressional action, but was finally permitted to expire on August 24, 1943.

Due to the demand for bituminous coal, railroads quite generally were required to pay maximum prices established by the O. P. A. Railroad fuel prices, which in July, 1942, averaged $2.13 per net ton at the mines, have since advanced to an average of $2.63 per net ton f. o. b. mines, for February, 1944, purchases.

The committee held several conferences in Washington with representatives of the S. F. A. W., at the latter's request, and has described various phases of railroad conditions, the results of which, the committee feels, have been instrumental in meeting the railroads requirements more adequately, i. e., by the issuance of such orders as War Regulations 4, 5, 10, etc., governing the allocation of bituminous coal. Several railroads have sought, and obtained, from the S. F. A. W., directives to assist them in meeting their individual fuel procurement problems. The committee has also discussed with the S. F. A. W. the estimate made by it—that 620,000,000 tons of coal will be required to meet the national consumption in 1944 which it describes as the critical year, although this figure, it says, does not include any estimate of military needs overseas. The railroads' consumption of bituminous coal for 1944 is estimated to be about 145,000,000 tons.

Diesel Engine Parts

By V. N. Dawson, Chairman*

The stores personnel of the railroads that have been operating Diesel locomotives over a period of years have found that, in general, the same methods that have been developed for other types of locomotives should apply in ordering and caring for materials for Diesel locomotives. Advantage should be taken of manufacturers' warehouse stocks at strategic locations throughout the country instead of attempting to carry large stocks and securing all the requirements from the main plants. If consistent, blanket orders should be placed to cover other than stock items required for emergencies.

It is urged that the Diesel locomotives of different manufacturers be segregated as much as possible, consistent with efficient operation, for the purpose of keeping material stocks at a minimum.

The acquisition of Diesel locomotives has necessitated the purchase of many items of so-called protective material. The actual use for these items can be developed only over a period of operation; however, these items must be watched closely so that none will become obsolete while on the shelves. It has been found that developments in operation have necessitated changes in the design, with the result that many items have become obsolete almost overnight. As these parts become obsolete, manufacturers should be requested to accept their return and allow credit for their value. Also, as the need for certain items purchased for protection is developed by the actual operation of the Diesel locomotives, manufacturers should be requested to allow the return for credit of those parts that have been found to be slow-moving. Further, when other types or other makes of Diesel locomotives are acquired, the purchase of protective materials for such locomotives should be based upon the experience gained when similar materials were bought for the previous lot instead of being based upon guesswork.

The return of guaranteed materials, as well as other items to be repaired by the builder, should be followed closely, as many economies are possible if all parts that can be repaired are repaired and reused. All materials for Diesel locomotives should be carried in the stock books by manufacturers' piece numbers. Standard material racks are suitable for all shelf materials, including gaskets. However, the builders recommend that gaskets be laid (not mounted) on flat surfaces. This can be accomplished best by placing them on sliding shelves, spaced far enough apart to care for the stock to be carried.

Much good can be accomplished by having periodic meetings of a committee or group, composed of technicians of the various departments on each railroad, for the purpose of discussing all phases of ordering, handling, using, and accounting for Diesel locomotive materials, the return of certain items to the builders for repairs, the issuance of instructions from the builders' general service bulletins and the return of surplus materials to the manufacturers for credit.

Prompt Handling of Cars

By J. T. Kelly, Chairman*

In emphasizing the urgent need that still exists for rolling stock, the committee dealing with the capacity loading and prompt handling of cars of company materials and the reduction of non-revenue ton miles, declared that efforts directed toward improvement must not be relaxed. With the war still in progress, the demands of the future are unknown, but the railways must be prepared to meet every need. To this end, every effort must be made to prevent the mis-use of equipment that is so urgently needed for war.

The committee reiterated the need for considering and observing the following practical suggestions:

1. *The use of motor trucks in congested territories.* Some roads have developed this practice to a point where car delays have been practically eliminated in congested terminals. Transportation and operating departments can be helpful in assisting to work out savings in car days delays and help to support any arguments for the equipment needed.

2. *Loading cars to capacity.* Loading schedules should be reviewed periodically to take advantage of changing conditions that might allow the elimination of a regularly scheduled car.

3. *Make all available use of classes of cars not in constant commercial use because of seasonal demands.* Stock cars can be used for certain loading, when not in demand, and while in some cases they have to be coopered, this can be justified when their use will release higher grade cars for commercial purposes.

4. *Avoid shipping material to jobs in advance of the time it is needed.* This practice should not be allowed to exist. It can be controlled by close cooperation with the using departments. Where material is requested so far in advance that cars are delayed in unloading, the matter should be called to the attention of the proper officers.

5. *Control shipping dates on carload shipments from dealers.* This is especially important on carload shipments of oils where there is not sufficient storage capacity. A study should be made to determine the delays that can be avoided by increasing the storage capacity. One road has provided a central storage point, where sufficient storage capacity so that cars that would otherwise be delayed because of a sudden reassignment of power can be unloaded with a minimum of delay. Engine and bedding sand should be scheduled for shipment only as facilities are available to unload it.

6. *Avoid ordering empty cars for loading before they are actually needed.* When ordering empty cars, the transportation department should be informed of the nature of the load and its destination, for cars from a class not in such heavy demand can be furnished frequently.

7. *Unload all cars promptly.* A car not needed today may be desperately needed before it is unloaded. Every car should be considered as a potential necessity for a commercial load of war material. Do not delay the unloading of it.

8. *Report promptly all cars on hand.* It is important that the transportation department know at all times where all cars are. Failure to report cars on hand may be the cause of serious delays in furnishing cars for loading. If cars are not set promptly for unloading, report the matter promptly to the proper officer.

9. *Mechanical equipment for use in loading and unloading cars.* A study of handling problems should be made to determine if full use is being made of this type of equipment. The extreme labor shortage has made it necessary to change many past handling practices and mechanical handling equipment has had to absorb much of this work. It can be utilized to speed up the loading and unloading of cars.

* Acting General Storekeeper, Baltimore & Ohio.

* General Storekeeper, Chicago, Milwaukee, St. Paul & Pacific.

10. *Keep in constant touch with the departments responsible for the distribution of cars.* Unless this is done, it will not be known what the current requirements are. If these requirements are known, preference can be given to the class of cars needed, and there will not be a surplus of one class and a shortage of another. It is not always important to unload ahead of the other cars, the car that has been on hand the longest. Cars for which there is immediate use should be unloaded first.

Exchange of Materials

By C. B. Hall, Chairman*

Little remains to be added to the revised report on the exchange of materials between railroads which was prepared and submitted on October 7, 1942, but the committee reiterates the necessity for the periodic preparation of lists of excess and inactive materials of general commercial design and of the circulation of such lists among adjacent and neighboring railroads. The last two years have been trying ones, from the standpoint of procurement of materials for maintenance, repair, and operation. Raw materials have been most critical in many instances. Items which, in normal times, would have been considered surplus and either sold or scrapped, have, of necessity, been reworked into usable materials.

Labor has now become a critical component, but there are slight indications of improvement in the raw material situation. These facts seem to indicate that from now on the inactive and excess lists should be larger. The exchange of such lists and the resulting increase in the sale of exchange materials will operate for a better inventory situation. Between October, 1942, and June, 1943, (according to the latest information available), materials valued at $1,245,000 were exchanged among railroads.

This action not only had the effect of relieving inventory of materials that might otherwise have remained idle indefinitely, but also helped the mill and manufacturing industries to serve the needs of the country more promptly and at the same time it proved a real help to the buying railroad in a time of need.

To make the exchange of materials fully effective, it is essential that the exchange lists be prepared, giving all necessary details, i.e., sizes, kinds, specifications, and conditions of the items, in every instance. Without such information, the railroads receiving such lists are unable to determine whether the offered material is suitable for their use and the general purpose of the plan is thus restricted somewhat. Neither should these lists include items which are peculiar to the equipment of one railroad, for as such, they would be useless to any other.

* Manager of Stores, Pennsylvania.

Scrap Committees Found Abandoned Branch Lines and Industrial Spurs Fruitful Sources of Steel Scrap

Stationery and Printing

By W. W. Griswold, Chairman*

Expenditures made for stationery and printing by Class I railroads were reported as follows:

1926	$28,418,710	1932	$14,400,000	1938	$12,958,000
1927	26,840,000	1933	11,628,000	1939	13,915,000
1928	25,638,000	1934	12,884,000	1940	14,502,000
1929	25,567,000	1935	12,334,000	1941	17,616,000
1930	20,300,000	1936	14,011,000	1942	19,727,000
1931	18,500,000	1937	16,431,000	1943	20,258,000

After pointing out the serious shortage of paper, the committee exhorted member roads to cooperate with the government in every way. The W. P. B. allotment of paper tonnage for the first quarter, 1944, was 25 per cent less than for the comparable period of 1941, and commercial printers have been restricted to 75 per cent of their 1941 paper consumption with government, state, federal, county, and municipalities as the only exceptions. Railroad requirements for printing are substantially greater today than in 1941 and it is important to cooperate with printers handling railroad orders, to help them comply with the W. P. B. restrictive orders. Printers are required to file requests for relief direct with the W. P. B., if the situation gets critical for any particular grade of paper, and member roads can help printers through the Purchases and Stores division, A. A. R.

The committee again emphasized the large savings, both in money and in paper, that can be made by adopting the recommended 7½-in. by 9½-in. size for plain papers and printed forms. A saving of 23 per cent is possible by reducing from 8½-in. by 11-in. to 7½-in. by 9½-in., for plain paper, with proportionate savings for the following items: printed letterheads, second sheets, mimeograph paper, carbon paper, smaller envelopes, and printed forms.

It is also important that half-size sheets, 4¼-in. by 7½-in. be more generally used for short communications, second sheets, scratch tabs, and the telegram blanks (unprinted).

Waybills—Interline

Due to acute shortage of sulphite pulp, E. R. Ford, secretary of the Accounting division of the A. A. R., has been requested to revise mandatory specifications for paper stock for interline waybills, as follows:

"In printing interline waybills, use paper not less than 75 per cent sulphite, not less than 25 lb. to the ream of 500 sheets, size 24-in. by 36-in. (equivalent to 17-22-11 lb.) and not less than 15 lb. to the square inch breaking strength under the Mullen test. Where difficulty may obtain in securing paper stock to comply with the above specifications, an alternative grade may be used for the duration, based on the following minimum specifications: Use paper not less than 50 per cent sulphite, not less than 32 lb. to the ream of 500 sheets, size 24-in. by 36-in. (equivalent 17-in. by 22-in.—14 lb.) high finish and not less than 15 lb. to the square inch breaking strength under the Mullen test."

The committee also recommended the more extended use of ground wood papers, such as railroad manillas and hard sized newsprint, in place of white sulphite bonds, wherever possible, since it is easier to secure delivery of ground wood papers.

Individual railway committees on forms and/or standardization were advised to review all printed forms and statements to (a) determine essentiality and discontinue unnecessary items, (b) effect consolidation, (c) eliminate waste space in forms, (d) prepare the minimum number of copies, and (e) adopt minimum size, weight and grade of paper.

While letter and legal size stencils are generally used, the note size, which is available in all grades and can be used satisfactorily for short communications, should not be overlooked. Wax stencils on runs up to 250 copies were suggested for additional savings, but careful supervision is necessary to accomplish the desired results.

Tariffs

The cost of printing tariffs continues to be one of the largest single items of expense for printing, and every possible means should be taken by individual roads to help reduce this expenditure. Careful study of the more general adoption of the following recommendations are suggested to effect substantial savings in money and manhours:

Securing prices and awarding contracts should be handled by the purchasing department and full cooperation should be given the freight and passenger departments for the distribution of the

* Stationer, Chicago, Rock Island & Pacific.

work for the most economical handling. Care should be taken that contracts cover every item of expense that enters into the billing of tariffs, so that no difficulty will obtain in checking invoices properly to avoid possible overcharge when all items are not covered completely.

Specifications as to size, grade of paper, size and style of type, binding margins and distribution are prescribed by the I. C. C. and must be strictly adhered to. The production of tariffs by the planograph method has proved successful and member lines and tariff publishing bureaus should continue to have a good portion, if not all of their work, handled by this method for substantial savings.

Many railroads are making additional savings by the production of concellation notices, division sheets and tariffs in their freight and passenger traffic departments. Care should be taken to prepare issues carefully so that good clean legible copies acceptable to the I. C. C., will be furnished. Typewriters with special type and other mechanical devices are now in use (some electric drive) for preparing good legible copy, and the maximum number of items per page, comparable with printed effort. Traffic departments should continue their efforts toward consistently checking shipper's mailing lists and keep the distribution to a minimum and to continue to watch the distribution of tariffs to local agents to avoid waste.

Waste Paper

While recognizing that the railways have regular programs for liquidating old records and disposing of waste basket accumulations of paper in general offices to waste paper dealers, the committee called for more intensive efforts to assure the complete reclamation of waste paper at all points. At the larger points where waste paper can be baled or sacked and stored (without fire hazard), it should be sold locally, or handled through the nearest division storekeeper. At other points, small accumulations should be given to local charitable organizations, to insure maximum recovery. Railroads operating under trustees should do all possible to secure court approval for the early disposition of records that are now available for destruction, under present I. C. C. regulations.

Women Have Undertaken New Duties With Zest and Efficiency in Helping Stores Departments to Carry on

Safety and Fire Prevention

By H. J. Blum, Chairman*

At no time in the many years that the railroads have been active in accident prevention, has the necessity for such activities been more pronounced than at the present, for experienced personnel can be replaced only with the unskilled and those with few accomplishments, the immature and those in advanced years. To offset the resultant handicap, meetings should be held with employees to instruct them and to review accidents to determine their causes and remedies.

Employees should be coached to familiarize themselves with the rules embodied in the 1941 report of Committee 14. Furthermore, the committee recommended that these rules be printed in pocket size booklet form, with any other pertinent suggestions for protection, such as:

(1) Assigning women and older men to work that they can safely perform. (2) Women should be trained in the operation of trucks or power machines before being given control. (3) Women should be instructed in the importance of wearing safety clothes. The use of flat heel shoes, a close head covering and overalls, instead of dresses, or other loose clothing, should be emphasized. (4) Encouraging employees to keep in good physical condition. A sluggish body or mind may cause serious injury or death.

In many localities where work is plentiful, one of the big problems is the indifference of new employees toward established regulations. This necessitates constant vigilance on the part of foremen or key men in charge, even to the extent of personal contact with guilty individuals. Our goal should be to impress on each employee the value of freedom from accidents, to the extent that our rules will become habitual reminders whenever the occasion demands.

Fire Prevention

In general, the attributes of new employees referred to in connection with safety have a similar bearing on fire prevention, and the same watchfulness is necessary, particularly against sabotage, where ocean dock facilities are operated. The committee recommends that the following suggestions be observed: (1) Watchmen should be schooled in the prevention and control of small fires. (2) New employees should be watched to detect possible saboteurs. (3) Inspect fire fighting apparatus regularly. (4) Watch employees who do not leave premises promptly at the end of their shift. Their motive may be sabotage. (5) Place the telephone number of the fire department with each telephone. (6) An F. B. I. agent should be notified promptly of any fire of suspicious origin. (7) Suspicious characters loitering around the premises should be reported to the police. (8) Keep all fire escapes and exits clear. (9) Keep all entrances clear to fire equipment stations. (10) Keep all fire roads unobstructed. (11) Emphasize the proper care of fire hose. After use, drain and dry it before replacing it on reels.

Commissary Supplies

By G. A. Goerner, Chairman†

Because purchasing and stores departments have been organized to apply modern practices to the acquisition and storage of railway supplies, the committee on the purchasing, storage and distribution of equipment and supplies used in dining cars, hotels and commissaries, advocates that the supervision of these functions be placed under the control of the purchasing and stores departments.

The committee recommends the use of the uniform materials classification for commissary supplies adopted by Division VI in 1941 for uniformity in the storage and handling of these supplies, and as a result of point rationing, it may be desirable to separate these classes further. This can be accomplished without disturbing the present classification, by separation into sections A, B, etc. As an example, Class 1 may be separated into Class 1-A for poultry and fish, and Class 1-B for meats and shortening requiring ration points.

* General Storekeeper, Missouri-Kansas-Texas Lines.
† General Storekeeper, Chicago, Burlington & Quincy.

Consideration should be given to labor saving devices for commissary stores operation, including the delivery of commissary supplies with automotive equipment and special trailers, the use of power meat slicers, special sacking devices for powdered goods, dry beans, etc., and movable storage containers. Much can be accomplished by supplying the commissary store as well as the laundry with mobile equipment for all goods where a further handling would be necessary if they were put in a stationary bin or container. To save rehandling of supplies, original containers should be used for the storage of supplies to the fullest extent practical. This storage method is especially effective with perishable goods.

No definite rules can be made for the care and protection of all commissary supplies. Much depends upon local conditions, effective refrigeration and the length of time the supplies will be stored before use. However, the following are some cardinal rules for the storekeeper's guidance: (1) Use old supplies first, (2) insure good merchandise turnover, (3) do not over-stock (especially perishables), (4) keep refrigerators clean and at proper temperatures, and (5) check all perishable stocks daily for quality and freshness.

After reviewing the activities of the O.P.A. in distributing rationed foods for civilian consumption and the resultant effects upon railroad dining car service, the report points out that the executive vice-chairman of the Purchases and Stores division, acting in conjunction with the Association of American Railroads Dining Car Officers, maintains direct contact with the government agencies and acts as an intermediary in developments as they occur.

Material Handling Facilities

By J. W. Wade, Chairman*

The demands of the armed services for material handling equipment have limited railway acquisitions to the indispensable. However, with the constant drain upon the manpower resources of the railroads, it is becoming more and more evident that something must be done to offset the loss through the utilization of mechanical devices for handling materials. Unquestionably, mechanical equipment has proved successful in peacetime and has a definite place in wartime and postwar economy.

Some roads recently have been successful in acquiring mechanical units, such as lift trucks (of the fork type, low and high platform, and the combined low lift platform and crane type), and some tractors. While there is an indication that the W. P. B. may act favorably upon applications for new equipment, the burden of proof rests with the railroads, and particularly with their stores, mechanical and other departments. In making application for W. P. B. authorization, a strong argument should be presented, outlining the essentiality of such equipment. A comparatively recent development in material handling equipment is the combined low lift platform and crane type unit, several variations of which are being produced at present.

Restrictions on the purchase and use of power machines further suggests that other details such as skids, pallets, trailers, etc., be reviewed carefully. When it has been determined that such articles can be manufactured locally at less cost, this should be done. Further, shop manufacture of such units may result in conserving critical materials, especially through the use of scrap lumber and metal.

The Army and Navy have had extensive experience in the application of the pallet-lift truck system, co-ordinated with the tractor-trailer system, and have developed many new ideas which will be of special interest to railway supply department officers. It is understood that a special film has been prepared by the Navy, under the direction of material handling specialists, for dissemination among the naval forces, showing the most efficient methods of handling materials. Army operations are also shown in films that are being exhibited by some manufacturers.

Recently, the trend has been toward the use of trucks and pallets. Undoubtedly pallets afford an economical means for handling and storing materials until they are actually applied, inasmuch as they can, in most instances, be constructed economically. As in the case of the ever popular skids and boxes, an effort should be made to have pallets serve double duty—carrying new materials to point of use and old ones to reclamation or repair points.

* General Storekeeper, Norfolk & Western.

Loss and Damage Prevention

By J. H. James, Chairman*

Recognizing that wartime conditions have aggravated loss and damage to shipments, the committee on loss and damage prevention, salvage and disposition pointed out that freight loss and damage payments are increasing seriously and the Purchases and Stores division, being the largest user of any kind of transportation, can therefore do a great deal toward the reduction of this expense. The report of the Freight Claim division on the Prevention of Loss and Damage, dated May 15, 1943, shows that railroad losses in this respect increased from 50 cents for every $100 of freight revenue in 1941, to 54 cents in 1942, or a total increase of $2,377,900 in losses from these causes. That wartime conditions have a definite influence is evidenced by the fact that the trend of loss and damage cost per thousand revenue ton miles during the last war increased from 8 cents in 1917 to 30 cents in 1921, or 275 per cent. The time is opportune to build up a greater resistance against these mounting losses, and the railroads making the largest demands on their own facilities have the greatest opportunity to educate their employees, as well as the shipping public, in the best methods and procedure to keep such losses to a minimum.

As an illustration of the possibilities of an effective plan established by a member road, the report outlined the procedure involved. After establishing a central point for the concentration of damaged and "over" freight, agents repacked and forwarded such shipments to the concentration station in care of the freight claim agent. The agent at the concentration point was provided with a list of commodities that might be used by the railroad and shipments were segregated accordingly, with all other material going to the sales agent. A representative of the stores department inspected the segregations twice a week and any material that could be used without materially increasing the railway inventory was accepted. The remainder was sent to the sales agent for disposal at the most favorable bid. With the plan in operation since June 25, 1942, results have shown an appreciable reduction in losses and the utilization of a considerable quantity of rejected materials by the railway itself.

* Assistant to Vice-President, Pittsburgh & Lake Erie.

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Official U. S. Marine Corps Photo

"Golden" Spike Ceremony in the S. W. Pacific

At the completion of the Guadalcanal, Bougainville & Tokyo Railroad, Capt. William M. Quigley, USN, commander of the naval bases in the Solomons, drives a brass spike as members of the construction battalion and natives look on. Navy Seabees laid the 6,443.5 ft. of track for the 1.22-mi., 28-in. gage railroad on Guadalcanal in three days. Only one officer in the construction force had had any previous railroad experience.

How a Freight Agent Can Conserve Car-Time

By R. W. Tobin*

THE New York Central System has for some time had in effect a code of suggested practices tending to obtain maximum efficiency in freight car handling, loaded and empty. Included in this program are general suggestions and those concerning specific departments. From the standpoint of the freight agents, this program requires that the agent supervise the men under his jurisdiction to know that they are performing efficiently their work of car handling. He must know the car requirements of his shippers. He will be in close contact with receivers of freight to facilitate the release of cars and have cars completely unloaded and free from refuse and dunnage when released. He must know that on-hand reports are checked currently and be in close touch with the local yard department or local freight crew to correct any delays observed.

The program further provides that the freight agent will be aware of any inaccuracies in his car service reports; that he will know that the empty cars spotted at the freight house are loaded in accordance with car service rules and in line with physical requirements of the loading.

The method at Utica conforms to the suggested practice of the System code. We keep a running car record for all consignees except a few who take team track delivery. This record is written up as waybills are received from yard office. The actual placement record is received from conductors of switching crews who telephone the office if constructive placement is involved. Track check clerks commence the daily track inventories at 7:00 a. m. and return to the office from between 8 and 9 a. m. with a complete report. They also report their observations of unusual conditions affecting the release of cars.

Team track deliveries are under direct supervision of a team yard clerk who telephones consignees when cars are placed. He prepares a daily track inventory and delivers it to the office. When all inventories are received, a review is made of the entire situation and, where delay is evident or indicated, the consignee is telephoned or called upon personally. The chairman of the Car Efficiency Committee, is also advised of any condition which we think requires his attention. He is manager of the traffic bureau of the Utica Chamber of Commerce and his co-operation has been most helpful. At various times a complete check of cars on hand is made by traveling car agents from the office of the manager of freight transportation and by special agents from the Car Service Division of the A. A. R. If delay in placing loads or removing empties is revealed by their inspections, a copy of their findings is furnished us so corrective measures may be taken.

The system employed is a simple one and is based on records which have been maintained by agencies for many years. The only change in the normal routine relates to our track inventories. Early in 1941, it appeared that better handling of empty equipment might result if our daily report of cars on hand reached the division car distributor earlier. The report of cars on hand is rendered by all stations on the division and is telephoned each morning to division headquarters. It gives the car distributor information regarding the size and type of cars and total number of each class available for loading. Since the agency secures such data from the track checks, it was necessary to speed up our operations in that respect. The earlier receipt by the division car distributor of this information has enabled him to fill car orders more quickly and with less hauling of empty cars from one yard to another. The early notification to consignees or yard forces has often given them the opportunity to correct oversights the same day.

The freight agency, as well as the consignee, has its responsibility for car efficiency and a few of the measures adopted will be mentioned:

One concerns the conservation of gondola cars. Utica Transfer receives from 10 to 15 gondola cars per week under load with l.c.l. for various destinations. Such shipments are generally heavy, bulky and difficult to handle and, ordinarily, the transfers would be made to other gondolas. The possibility of transferring such shipments by box cars by use of a gantry crane in the team yard was suggested. Such plan entailed additional labor and expense but its adoption saved the use of many gondola cars. In many cases, the loaded gondolas received were made empty and were available for immediate service elsewhere. The box cars used were switched to the transfer house and were filled up with other freight.

Another feature involves a change in operations on our Broad street branch which was worked out with the co-operation of our trainmaster and general yard master. This branch serves 26 plants, and a team track at the west end can serve 6 patrons. In normal times, switching service is provided on week days but in May, 1941, the week-end accumulation handled on Monday, increased to such an extent that some consignees received their cars too late in the day to effect release. Engine crew was then assigned to work every day and this has resulted in better service, and release of many cars on Mondays rather than Tuesday.

It was also arranged at that time for the clerk to return to Broad street after he had delivered his track inventory to our office. On his return to that territory he visits each plant and ascertains what empty equipment and switching service is needed. When he completes the tour of the plants, he is at the east end of the branch where he meets the conductor of the switcher. Under this plan the clerk is able to give the conductor full information as to patrons' requirements and location of empties required to fill orders. This arrangement has been of great help in speeding up train crew operations, and has also saved considerable cross-hauling of empty cars from and to Utica yard.

The final item relates to cars saved in connection with our l.c.l. transfer operations. This plant handles more transfer tonnage than any other station on the system, and during the day 400 cars are switched to and from the house tracks. 130 empties are available at starting time and, in accordance with the System program, an earnest effort is made to load them according to Car Service Rules. We have been fairly successful in such endeavor and checks made have shown 95 per cent compliance with Car Service Rules.

In the matter of car conservation, the platform forces have produced results. In 1940 the box car supply was fairly ample and all scheduled car lines were being operated. During October, 1940, we loaded 5,860 cars. In October, 1941, tonnage increased 10,000 over the previous year and 5,100 cars were loaded. March, 1942, tonnage increased 400 tons over October, 1941, and 4,760 cars were used. In May, 1942, we handled about the same tonnage as in March. O. D. T. Order No. 1 became effective May 1 and daily supervision of the loading operations was necessary. It took a bit of doing, but the order was obeyed and only 3,660 cars were used.

During the past three years, our tracing department, my chief clerk and myself have received hundreds of telephone calls from about every state in the Union. Traffic managers, Army and Navy personnel; plant officials—all were seeking forwarding records on important shipments which our transfer system enables us to furnish. Without exception, all such callers seem pleased at the information given them and no dissatisfaction was expressed, even when delays had occurred.

* Freight Agent, N. Y. Central System. This article is an abstract of a report to the meeting of the Atlantic States Shippers Advisory Board, Syracuse, N. Y., April 13.

Railroads-in-War News

Grain Movement Is Headed Toward Peak

All-time record wheat crop and abnormal corn movement tax car supply machinery

A combination of unusual weather conditions, an exceptionally heavy yield in the winter wheat belt, and a corn movement running around a million bushels daily at a time when such shipments normally are at a minimum, all have created a situation where the railroads' ability to supply cars for the grain movement and keep them moving will be put to unprecedented strains, according to late reports of the grain car position.

So far, however, Association of American Railroads sources indicate the grain car supply has been substantially better than last year.

Conditions Resemble '42—In a statement released June 26, Col. J. Monroe Johnson, director of the Office of Defense Transportation, pointed out that the best efforts of which everybody concerned is capable are being exerted to move the wheat crop as rapidly as possible to avoid unnecessary holding on the farm and delay in unloading. With the cooperation of the farmers, the grain interests, the railroads, and the O.D.T., "we hope to be able to move the crop more rapidly than was done in 1942," he said. "The wheat farmer, therefore, will probably not have to hold any more wheat on the farms this year than in that year. We hope that it will be much less."

It is expected that the peak of this year's grain movement will be reached within the next 30 days. While the wheat harvest in the Southwest was delayed by wet weather, so that the crop in that section is coming to market later than was expected, and very little ahead of the Kansas crop, the railroads serving that area expect to do as well in moving the grain from the farms as they did last year, when there was no serious complaint. So far, it is understood, there have been no reports of blocked elevators, and it has not been necessary to pile grain on the ground because of car supply difficulties.

The yield of winter wheat is setting an all-time record, according to reports, being so heavy that the combines are having great difficulty in handling it. Fortunately, therefore, the grain car supply in the western territory is said to be substantially ahead of the same time last year, and the elevator situation, as previously noted in *Railway Age*, is, except for manpower shortages, far more favorable for prompt movement of the crop, both at loading points and at the terminals.

Permits in the Southwest—The A.A.R. Car Service Division permit system on grain movements was put into effect at Dallas and Fort Worth, Tex., on June 23 and at Enid, Okla., on June 24. The program under which roads in the East have been providing box cars to supplement the western roads' car supply has been carried out as scheduled, according to the A.A.R., and its operation has been extended to July 23, despite the continued demand on the eastern roads for cars to meet the needs of the general war traffic as well as their own unusual grain movements. The Canadian roads also are experiencing difficulty in building up a car supply to meet the needs which are suggested by indications of a very heavy wheat crop in the western provinces, and American roads have been asked to expedite the return to Canada of equipment, especially box cars, belonging to the Canadian roads.

In addition to the unusual yield of winter wheat reported in the Southwest and the equally heavy crop in Kansas and nearby territory, where the harvest is getting under way, the northern spring wheat states also are preparing for an extraordinary yield, it is reported, and the demand for cars in that area is expected to overlap the winter wheat movement, with the possibility that some "tight" car supply situations may develop. The situation is further complicated, according to A.A.R. sources, by the effects of the "freeze" order on corn movements in the principal corn-growing districts, since this has resulted in a late movement of corn which absorbs a large number of cars that otherwise would have been available for wheat.

The movement of feed wheat from Canada into the United States, which gave rise to much controversy last winter because of the drain on the grain car supply, no longer requires the diversion of American cars, it is understood. The movement through Sweet Grass, Mont., from Canada to Pacific coast points in the United States, which had been limited to 50 cars per day, was canceled on June 24, thus concluding the diversion program.

House Passes Bill for Carrying Explosives on Passenger Trains

The House on June 22 passed H.R. 4958, the bill which would clarify provisions of the Transportation of Explosives Act in such a way as to permit the transportation of explosives on passenger trains. Before acting favorably the House adopted an amendment which makes it clear that custodians and caretakers would be permitted to ride with the explosives. As originally framed, the bill had a broad prohibition against carrying the explosives "in that part of a car or vehicle which is being used for the transportation of passengers for hire."

Prescribes Priority for War Casualties

I. C. C. Service Order implements program to divert equipment if needed

Railroads are required to divert facilities, to cancel or discontinue passenger train service, to refuse permission to passengers to board trains, to require passengers to vacate space and accommodations on trains, or to cancel reservations, space assignments or tickets for passenger transportation, when necessary to provide preference and priorities for disabled military, naval and merchant marine personnel, under the provisions of Interstate Commerce Commission Service Order No. 213.

This order was issued on certification by the director of the Office of Defense Transportation that it is essential to the national defense and security that such priority be afforded to invalid, disabled or infirm members of the armed services of the United States or other nations allied with this government, with their attendants, en route to or from any point of hospitalization. In announcing the order, O.D.T. Director Johnson called attention to a letter written by him to J. J. Pelley, president of the Association of American Railroads, in which he pointed out that the commission order, based on the O.D.T. certificate, provided full legal support to the railroads in carrying out their plans to afford preferred service for the movement of casualties, as well as protection against any "unthinking opposition" that might be aroused by the execution of any of its terms.

Employees Are I.C.C. Agents—Effective June 27, the order will remain in force until further order of the commission. In addition to its provisions for the preferential treatment of casualties, it designates as an agent of the commission for the purpose of canceling or refusing accommodations to passengers on or about to board trains every railroad ticket agent and passenger conductor and every sleeping car conductor, limiting the authority of the latter group, however, to occasions when the train conductor is absent.

The terms of the order require all railroads and the Pullman Company, "whenever and to the extent necessary" to afford priority to invalid service men, (1) to divert equipment and transportation facilities and supplies from use in freight or passenger service; (2) to cancel or discontinue passenger trains; and (3) to refuse permission to passengers, other than invalid service men and their attendants, to board passenger trains. In addition to these provisions, which apply to invalid service men generally, the

order further directs the railroads and the Pullman Company, in order to give preference to service men, with their attendants, traveling under a certificate issued by an authorized medical officer of the armed services or merchant marine, "whenever and to the extent necessary," (1) to cancel reservations and space assignments, or tickets therefor, and (2) to require passengers to vacate the space and accommodations occupied by them, either prior to the departure of a train or at any point en route at any time of day or night.

War Comes First—"I trust that the issuance of this legal support will fix it in the minds of all patriotic Americans that the first desire of the railroads is to serve America at war, and also that it will make us all realize more deeply that unnecessary travel may interfere with the welfare of the men who are fighting and winning this war to preserve our way of life," Col. Johnson said.

As noted in *Railway Age* last week, page 1216, the joint plans of the railroads and the medical and transportation branches of the armed services for the movement of casualties had been outlined to Col. Johnson by Mr. Pelley, who had pointed out that, "in any event, the railroads will see to it that the necessary sleeping car space is available, regardless of any interference with other traffic which might result."

N. Y. C.'s Plea to Save Space for Invasion Wounded

"Bedroom 'B' Is Taken . . . so help share the space that's left" is the title of the latest New York Central advertisement, scheduled for newspapers in 25 cities along its lines. Timed with news of the planned movement of invasion wounded aboard regular trains, the message offers also a list of "Share-the-Railroad Rules."

The illustration shows a wounded man being placed aboard the train through a car window, the manner in which litter cases must be handled on regular sleeper or room cars. It is thought that the photograph, together with the headline will register with the public with "almost poster rapidity." A check list of rules attempts to correct current problems in dealing with reservations and baggage.

Forgings Committee Appointed

The appointment of 14 representatives of producers of open die forgings to an industry advisory committee was announced on June 24, by the Office of Price Administration. The industry group will meet with OPA at a later date for a discussion of pricing problems arising within the industry.

Members appointed to the committee are: R. F. Anderson, Anderson-Shumaker Company, Chicago, Ill.; R. E. Christie, Crucible Steel Company of America, New York, N. Y.; Walter S. Cox, Camden Forge Company, Camden, N. J.; William Finkl, A. Finkl and Sons Company, Chicago, Ill.; E. M. Gallager, Hammond & Irving, Inc., Auburn, N. Y.; S. B. Heppenstall, Jr., Heppenstall Company, Pittsburgh, Pa.; W. Illingworth, The Commercial Forgings Company, Cleveland, Ohio; H. C. Isaacson, Isaacson Iron Works, Seattle, Wash.; E. H. Lang, Erie Forge Company, Erie, Pa.; Samual McClements, Jr., Carnegie-Illinois Steel Corp., Pittsburgh, Pa.; George H. Philson, Cann & Saul Steel Company, Philadelphia, Pa.; Milo G. Spaich, American Forge Company, Berkeley, Calif.; Herbert Weaver, Bethlehem Steel Company, Inc., Bethlehem, Pa.; Henry H. Ziesing, The Midvale Company, Philadelphia, Pa.

"Employee" Magazine for Army Railroaders

Since its inauguration last fall, the weekly newspaper published by and for the personnel of the Military Railway Service, "The Yankee Boomer," has developed into a newsy 4-page, illustrated, offset-printed publication with many of the best features of the employee magazines of the larger American railroads.

The circulation of "The Yankee Boomer" is restricted to military personnel, so that individuals and Army units may be identified in its pages. In addition to the personal items about railway men in the service—a feature in which the parallel to the typical employee magazine is particularly noticeable—the M.R.S. paper features a relatively generous display of sports news and special columns in which related news and comment are organized.

Among the columns are the "Switch Shanty" and "Over There," the latter being a summary of what's going on on American railroads while the service men are overseas. In addition, "The Yankee Boomer" regularly carries a number of illustrations in each issue, ranging in subject matter from the awarding of military decorations to displays of feminine pulchritude of the type sometimes referred to in the trade as "leg art."

Vinson to Lose Veto Power Over Rail Wage Awards

Economic Stabilization Director Fred M. Vinson will be relieved of the authority he now has to pass on railway wage adjustments under the provisions of the recently-enacted bill to extend the Emergency Price Control Act of 1942, which President Roosevelt this week said he would sign on July 1.

The "de-Vinsonizer" makes findings of Railway Labor Act agencies, i. e., the National Mediation Board or arbitration or emergency boards, "conclusive" in railway wage proceedings; although such agencies will be required to certify that their findings are consistent with the stabilization program.

Johnson Wants Public to Spend Holiday at Home

Calling on the public to refrain from traveling during the holiday period extending from Wednesday, June 28, to Thursday, July 6, Col. J. Monroe Johnson, director of the Office of Defense Transportation, said this week that he was "frankly worried" by reports that abnormally heavy passenger traffic that might interfere with the war program is expected in this week.

Pointing out that no special holiday trains would be operated, and that the order giving transportation priority to invalidated service men is now in effect, he warned prospective travelers that they might be evicted from space occupied or reserved at any time, that cars or trains might be removed without notice, and that no guarantee could be given that return transportation can be provided even though accommodations have been assigned and paid for.

O. D. T. Appointment

Richard H. Clare, assistant general passenger agent of the Pennsylvania with headquarters at Philadelphia, Pa., has been appointed assistant director for passenger traffic of the Railway Department, Office of Defense Transportation. He succeeds Dudley Riggs who is returning to his former position of assistant general passenger agent of the St. Louis-San Francisco.

American Roads Train Mexicans in Shop Practices

Arrangements recently have been completed under which a substantial number of National Railways of Mexico employees will be trained in the use of modern machine tools and shop practices in the shops of a number of United States railroads, it is understood. While some training of this character already has been going on, the program now will be considerably enlarged, it appears, so that as many as 1,000 Mexican shop workmen may be in training in this country at one time.

Sponsored by Railway Mission—The arrangements for this undertaking have been pushed by the United States Railway Mission in Mexico, headed by Oliver M. Stevens, it is explained, and have developed both from studies made in this country recently by groups of Mexican railway officers of the methods and practices employed on American railroads and from the improvements in the shop equipment of the Mexican system which have been brought about through the efforts of the Mexican government to bring its railroad facilities up to the standards required to meet wartime demands.

The details of the program under which the training plan will be carried on have been made effective through the co-operation of the Inter-American Training Administration, the labor relations section, and the rail section of the Transportation Division of the Office of the Co-ordinator of Inter-American Affairs, and have involved the mission and the Mexican government, on the one hand, and the American railroads and railway unions on the other.

Will Get Expense Money—Under the general requirements of the program, the Mexican trainees will spend sufficient time in American railroad shops to become familiar with the tools and methods in use, so they can put the same practices into effect in their own shops. On the average, it is expected that six months will suffice for such training, but the program will be subject to some individual variations. In general, the American railroads will pay

these Mexican trainees, as expense money, the going rate of pay for the job and place of employment, but the Mexicans will not acquire any employment relationship to the roads on which they are training, and will not be subject to the provisions of the Railway Labor Act and other special legislation for the benefit of rail employees.

Ends Government Control of Puerto Rican Road

Termination of government control of the American Railroad of Puerto Rico was effected on July 1 at 12:01 a. m., eastern war time, under an administrative order issued June 27 by Colonel J. Monroe Johnson, director of the Office of Defense Transportation. O. D. T. had operated the road since May 14, 1943, when it was taken over by President Roosevelt after operation had been suspended for two days as a result of a strike.

Colonel Johnson's termination order (Administrative Order ODT 28) refers to a determination by the President that government control is "no longer required for the successful prosecution of the war." Among authorities for its issuance the order cites a memorandum from the President dated June 21.

C. B. Bryant Becomes Director of W. P. B. Equipment Division

C. B. Bryant, assistant to vice-president of the Southern, has succeeded G. M. Betterton, general purchasing agent of the Southern Pacific, as director of the War Production Board's Transportation Equipment Division. Mr. Bryant's appointment became effective July 1 when Mr. Betterton, who had been on leave of absence, returned to the S. P.

Complainant by Contract

How the Navy Department contracted with a railroad to prosecute a rate complaint against its connections is told in a proposed report by Examiner F. L. Sharp which has been made public by the Interstate Commerce Commission. The proceedings, No. 29015, involves the rates to and from Mare Island, Calif., Navy Yard, served by the San Francisco & Napa Valley which connects at Napa Junction with the Southern Pacific.

The connection inaugurating the service to Mare Island was effected in 1920, and tariff rates on interstate traffic to and from Mare Island were thereafter until March 10, 1943, made by the addition of the S. F. & N. V.'s local rate of five cents per 100 lb. to the rates from or to the origins or destinations of the shipments to or from Napa Junction or Vallejo, whichever was lower.

On March 10, 1943, the Navy made arrangements to have the S. F. & N. V. handle the government's Mare Island traffic under an operating-expense-plus-10-per-cent contract, which contract, the proposed report says, "contains provisions which obligate complainant to file and prosecute the instant complaint, with the collaboration and assistance of the Navy." Moreover, the contract "is to terminate upon final action in this proceeding, and may be terminated by either party upon 60 days' written notice should final action in this proceeding be delayed more than three years from March 10, 1943."

In the complaint the S. F. & N. V. assails the interstate rates to and from Mare Island as unreasonable, unduly prejudicial of Mare Island and unduly preferential to Vallejo to the extent that they include its local rate of five cents per 100 lb. It asks that the S. P. and other defendants be required to apply the Vallejo rates at Mare Island and accord the complainant divisions thereof. Examiner Sharp would have the commission require establishment of the arrangements sought by the complainant, finding that the assailed rates are unreasonable and that through routes and joint rates to and from Mare Island are desirable in the public interest.

A. A. R.'s Henry Challenges Truckers' Advertisement

Claims in American Trucking Associations' advertising that trucks carry the "vital fifth" of all United States freight and cut delivery time in half have "vastly overstated the volume factor," while the "vital" characterization is a "gross overstatement," according to Robert S. Henry, assistant to the president of the Association of American Railroads. Col. Henry's comment on the current A.T.A. advertisement, entitled "Tracer Bullets—Truck Size!" was embodied in a recent circular sent to railroad public relations representatives.

It recalled the similar incident of last year when A.A.R. President J. J. Pelley challenged a previous A.T.A. advertisement which undertook to establish that "with one-twentieth of railroad capacity, trucks haul one-fourth the load—in less than half the time." Mr. Pelley's complaint to A.T.A. president Ted V. Rodgers was reported in the *Railway Age* of March 6, 1943, page 474, while Mr. Rodgers' reply was noted in the issue of March 20, 1943, page 595.

Statements such as that in the current advertisement, Col. Henry told the public relations representatives, are "difficult to pin down," because of the absence of accurate and complete statistics for the motor truck industry as a whole. He went on to point out, however, that "the best measure of service performed by any carrier of freight is aggregate ton-miles"; and that "a clear distinction should be made between the volume of inter-city movement by trucks and the volume of local movement."

On that basis, the latest annual report of the Interstate Commerce Commission shows that in 1942 the inter-city trucks performed only 6.7 per cent of the country's land-borne ton-miles while the railroads were performing 85.6 per cent. Bureau of Railway Economics studies indicate that in 1943 the trucks carried a still smaller proportion.

On the "vital" characterization, Col. Henry conceded that "trucks undoubtedly handle much essential war traffic," but he insisted that "it is inaccurate to call it *The Vital Fifth*"; for "railroads carry the same war goods trucks handle and other goods besides which trucks are not in a position to handle, and, on the average, move them in much greater quantities and for much longer distances."

O. W. I. Warns of Growing Load on the Railroads

An Office of War Information press release of June 26, which was rather widely used, at least in part, in the daily newspapers, stressed the view, attributed to the Office of Defense Transportation, the Interstate Commerce Commission, the War Production Board, and "railroad sources," that the "strain on the carrying capacity of American railroads now is increasing at a faster rate even than previous calculations had indicated."

Passenger-Miles Up 25.5 Per Cent—The latest available figures show, the O. W. I. pointed out, that both passenger and freight traffic curves are mounting more sharply than had been anticipated. For example, the O. D. T. estimated in December, 1943, it said, that the 1943 total revenue passenger-miles figure would be about 85 billion, and that travel in 1944 might be expected to show a 15 per cent increase over that. But, the statement continued, final 1943 figures showed a total

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Commend Railroads for Their Invasion Role

Above principals in "Back the Invasion" program, presented June 21, by the Mutual Broadcasting System, from Station WOL, Washington, D. C., (and reported in *Railway Age*, June 24, page 1216) emphasized the effective performance of the railroads in supporting the Army and Navy in preparations for invasion of the Continent, and in other major offensives. (From left to right): Albert R. Beatty, Manager of the Publicity Section, A. A. R. (program director); Major General Charles P. Gross, Chief of Transportation of the Army; Rear Admiral William Brent Young, Chief of the Bureau of Supplies and Accounts and the Paymaster General of the Navy; and Colonel J. Monroe Johnson, Director of the Office of Defense Transportation.

of 87,842,211,827 passenger-miles, and figures for the first quarter of 1944 showed an increase of 25.5 per cent over the same period last year. At this rate of increase, the final 1944 total would exceed 110 billion, more than double the 1942 figure of 54 billion revenue passenger-miles, it explained.

Freight traffic, too, has been steadily increasing, the O. W. I. said further, and reports for the first quarter of this year showed a total of 182 billion ton-miles, an increase of 6.8 per cent over the same period last year. Maintenance of this rate of increase would mean a total for the year of 776 billion ton-miles, "much higher than earlier estimates."

The statement went on to explain how wartime material and manpower shortages had prevented the railroads from obtaining new equipment or carrying on maintenance work on a scale proportionate to these actual and forecasted traffic increases, and concluded with the comment that O. D. T. surveys have indicated that 20 per cent of civilian travel is non-essential.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since June 7, and which are of interest to railways:

Car Materials—Because Direction 3 to P-142, issued June 1, inadvertently omitted private car line operators from its scope, the direction has been amended to include these operators along with railroad operators who are permitted to place advance orders for delivery of special items of car materials on manufacturers' production schedules. Private car line operators control their own cars, such as refrigerator cars, tank cars and coal cars.

Advance orders for items under Direction 3 —air brakes, power hand brakes, brake beams, couplers and coupler bodies, and car bolster springs—may be placed for delivery during each of the three calendar quarters following the quarter in which the order is placed. The operator may order for delivery in each advance quarter up to 75 per cent of the amount of each of the above items authorized for him for the first quarter of 1944.

Each operator must continue to apply in each quarter on Form WPB-2585 for authorizations on firms in accordance with Order P-142, WPB said. To the extent that the firm (confirmed) authorization on WPB-2585 differs from the advance authorization for any item, orders must be cut back or new orders may be placed accordingly.

Inspection and Measuring Tools—Gage blocks, production and inspection gages and tool room specialties have been eliminated from GPO E-5-a. In short supply two years ago, these items are now being delivered on a basis almost current with orders. E-5-a controlled them as to sales, which will now be unrestricted.

Control over micrometers and various types of measuring tools is retained and a rating of AA-5 will be required at the producer level only. The order provides that 20 to 25 per cent of monthly production be set aside for stock orders. Only those purchase orders that bear preference ratings assigned on Form WPB-547, WPB-646 or Canadian Form PB-1010 are included in the term "stock orders."

Metal Lath—Although restrictions on the use of metal plastering bases and accessories have been slightly eased, production will have to be kept at its present level because of the shortage of steel. End use restrictions were removed from the order controlling these products, L-59-b, in May, and somewhat different permitted uses were listed in CMPR 6, Schedule A, which now includes "Construction Limitations," covering permitted uses for projects requiring authorization under L-41, WPB officers pointed out. Permitted uses for war housing are given in Schedule 1 of Order P-55-c.

Paint Oils—Although there has been speculation within the paint industry as to the possible revocation of M-332, which controls the percentage of drying oil in formulas of various classes of civilian paints and prohibits the delivery of whole linseed oil or fish oil for purposes of thinning paint, the order will be continued until further notice. Revocation is not possible at this time, officers of the WPB said, because of a continuing shortage of drying oils. The order will, therefore, be continued until the over-all drying oils situation improves to the point where control orders are no longer necessary.

Phenolic Resins—A limited supply of phenolic resins, civilian use of which was formerly denied for general maintenance paints, including those for railroads, trucks, and factory machinery, will now be allocated for such applications. This change in allocation policy has been brought about by lessened military requirements for certain types of phenolic resins and by the increased supply of imported British cresylic acid, a raw material in phenolic resin production, W. P. B. said. Chemicals Bureau officials suggested that paint manufacturers consult with their resin suppliers as to the resins that are available and might be utilized for their specific needs.

Plywood—Control over softwood plywood has been extended by the amendment of L-150-a, to include all softwood plywood strips, odd sizes, and scrap with surface measurements of more than eight square feet. Order L-150-a, which restricts the sale of softwood plywood by distributors to purchase orders rated AA-2x or better, formerly excluded all pieces not meeting commercial standards (rejects, cut-backs, strips, odd sizes and scrap). The exemption resulted in some softwood plywood going into unessential use, W. P. B. said. L-150-a, as amended, limits exemptions to pieces measuring less than eight square feet. Larger pieces can be completely utilized for military boxing and crating, W. P. B. said.

The amended order also permits the sale of softwood plywood on purchase orders rated AA-3 for use in authorized construction projects, (Forms GA-1456 and CMPL-593). Such purchase orders must be certified as set forth in L-150-a. The purchase of plywood on AA-3 ratings will be authorized only for use in concrete form construction, W. P. B. said.

Rope and Cordage—Requirements for rope in the third quarter of 1944 will be approximately the same as prevailed in each of the first two quarters of the year. Processing results from the first five months of the year show that the over-all rope program is being met despite serious manpower problems facing the industry, WPB said. Beginning July 1, the cordage program will require the use of American line hemp in sisal rope, according to WPB, and it is contemplated that the proportion will be increased in the third quarter.

Water Meters—Bronze again may be used in the manufacture of water meters of one-inch size or less, according to the recent amendment of Schedule 1 to L-154 which authorizes the use of an alloy containing up to 82 per cent copper and 3 per cent tin in main casings, register boxes and lids for smaller size meters to be delivered beginning July 1. Restoration of the use of bronze for iron-bodied meters will provide a greatly improved product, WPB said.

Prices

Bearings and Bushings—Amendment No. 120 to MPR 126, as amended and effective July 1, adds bearings and bushings made of ferrous and non-ferrous metals to the list of articles covered by provisions of the regulation establishing maximum prices for machines and parts and machinery services.

According to the O. P. A. the transfer of coverage will not affect the present general level of prices. Pipe and tube fittings subject to MPR 188 and ferrous and non-ferrous castings subject to RPS 41, RMPR 125, or MPR 241 or 244, are not affected by this amendment.

Gray Iron Castings—A new alternative method for pricing "short orders" (where the shipping weight multiplied by the quantity ordered does not exceed 200 lb.) of gray iron castings, effective June 15, permits a price per pound for short order castings 2½ times the seller's average price per pound for all gray iron sales in 1942. Amendment 8 to MPR 244 revokes certain provisions of Amendment 7, that permitted a seller to compute a ceiling price for short order castings by multiplying the shipping weight of the casting by twice his average price per pound for gray iron castings in 1942—and by adding a "starting charge" of $8 or $12 depending upon whether the casting was non-cored or cored.

Experience has revealed that in some cases prices computed under that method were excessive. To take an extreme example, a seller could charge more than $12 for a casting weighing less than one pound, because of the starting charge. The new alternative method, in eliminating the starting charge, should reduce prices substantially and at the same time keep prices sufficiently high to encourage acceptance of short order business. Also it provides the foundries with a simple way of computing prices.

Machine Tools and Parts—Pricing provisions covering sales of new machine tools, attachments and parts have been revised and broadened and issued in the form of MPR-67, effective June 28. The new regulation will not change the present level of prices for the articles covered, and is designed to simplify the pricing of these machines, attachments and parts vitally needed for the successful prosecution of the war and in the production of essential civilian goods, O. P. A. said.

Instead of freezing list prices in effect on October 1, 1941, the regulation now freezes all prices in effect on that date. A provision has been added which permits the addition of resale discount or commission to the price in effect on October 1, 1941, or the last contract price during the period January 1, to October 1, 1941. This addition is only permitted in the case of new machine tools, attachments or parts which the manufacturer intends to distribute through dealers for the first time. Provision has also been made for the pricing of new machine tools, attachments and parts which represent more than a modification of an article for which a maximum price is established. Previously, no provision was made for determining prices in such cases.

Malleable Iron Castings—Provisions of the malleable iron castings regulation governing alternative pricing methods that sellers may use in determining their maximum prices have been modified by Amendment No. 7 to MPR 241, effective June 23, to permit the use of either the pre-base period method or the formula method on all deliveries of castings made on orders received or contracts entered into prior to June 30, 1944. In all other cases, if the seller elects to sell or deliver castings on or after this date at his pre-base period maximum prices, he cannot afterwards shift to formula prices, according to O. P. A.

Until recently, sellers could make such shifts without restriction and used whichever pricing method was more advantageous. However, O. P. A. found that this practice made maximum prices indefinite and uncertain, and consequently the regulation was more difficult to enforce.

To correct this condition, O. P. A. issued an amendment forbidding this practice, effective May 31, 1944, but applicable to all deliveries commencing 30 days later. Since sellers may have been pricing on the pre-base period method with the expectation of shifting to the formula method, O. P. A. said at that time, this 30-day period would afford sellers time to change to the formula method of establishing maximum prices should they so desire.

Western Poles and Piles—Amendment No. 2 to MPR 460 provides that in the case of timber (poles and piles) sold on a lineal foot basis, the permissible addition shall be 20 per cent above the appraised value, or the same as that permitted on timber sold on a thousand feet log scale measurement basis.

The reporting provision is changed to substitute a much simpler reporting form (OPA Form 675-936) for the one formerly used by buyers to report their purchases to OPA. Copies can be obtained from regional or district OPA offices.

GENERAL NEWS

U. S. Barge Lines Claim Net in '43

It came from "other income" which more than offset operating loss

Various items of "other income," including a $243,543 profit on the sale of temporary cash investments and interest income of $91,873 enabled the government-owned Inland Waterways Corporation to overcome an operating deficit of $120,871 and report a 1943 net income of $178,012. The annual report of Chester C. Thompson, chairman of the board and president, was made public this week by the Department of Commerce.

Claims Savings to Shippers—The net income compares with a 1942 deficit of $726,492, the operating deficit for that year having been $858,259. As usual, the report includes an estimate of the "savings to the public and shippers" on traffic handled by I. W. C., such "savings" being the difference between I. W. C. rates and "the charges that would have been paid had the traffic moved all-rail." On that basis, the 1943 "direct saving" is put at $1,796,700; while the total "saving" from the creation of I. W. C. on June 1, 1924, to December 31, 1943, is put at $41,031,700.

Operating revenues increased $795,830 as compared with 1942, but the report reveals that the increase was due to towage of freight for other carriers under reciprocal agreements, towage of government craft and other equipment, and the charter of I. W. C. equipment to others. Revenues from I. W. C. freight were off 14.5 per cent, the volume being down to 1,932,662 tons from 1942's 2,260,697 tons.

Fewer Customers in '43—This loss of traffic occurred despite the work of what Mr. Thompson called the "small but active and aggressive traffic solicitation staff, with offices in New York, Chicago, Houston, New Orleans, Memphis, Mobile, Birmingham, Minneapolis, St. Paul, and St. Louis." This staff maintains contact with all government agencies which control the routing of war freight and craft "in an effort to provide the services of the Corporation in the War effort."

The consolidated income account shows the 1943 gross revenue at $8,300,116, compared with $7,504,285 in 1942. Operating expenses totaled $8,420,988, compared with $8,362,545. "All known expenses in connection with the operation of transportation facilities by the Corporation have been included in the accounts," says the accompanying report of Guy Bartley, secretary-treasurer. Mr. Bartley then goes on to list "certain expenses which the Corporation, if privately owned, would have been obliged to pay." The list includes: Personal injury claims of employees paid by U. S. Employees Compensation Commission, $11,427; postage, $25,000; difference between commercial and government rate on telegrams, $2,544.

Other Barges Escape Taxes Too—He also notes that I. W. C. is exempt from taxation, conceding that if privately owned it would be required to pay taxes on its investment in terminal property. On the other hand, Mr. Bartley mentions information "from reliable sources" which indicates that privately-owned carriers on the inland waterways "are not subject to taxes on their floating equipment"; and "approximately 86 per cent of the Corporation's total investment in water line facilities consists of floating equipment."

Non-ops Demand Longer Vacations

Organizations representing "non-operating" railway employees are serving notices on the railroads of a demand for longer paid vacations.

What they are asking is that an employee, after working the better part of a year, should receive a holiday of 12 working days at his customary rate of compensation. After two years' service, the unions want the employee to get 15 working days off with pay. After three years, the demand is for a vacation of 18 working days—i.e., three weeks.

At present, the non-ops get 6 days' paid vacation—except clerks and telegraphers, who get 9 days after two years of service and 12 days after three years.

Senate Order Keeps Barnard Nomination Alive

Before adjourning last week until August 1, the Senate entered an order which has the effect of suspending its rules to hold "in status quo" all Presidential nominations not acted upon at the time of adjournment. Among the nominations now before the Senate is that of Commissioner George M. Barnard of the Indiana Public Service Commission whom President Roosevelt has nominated for the Interstate Commerce Commission to succeed the late Joseph B. Eastman.

As noted in the *Railway Age* of June 10, page 1130, action on the Barnard nomination has been delayed because injuries received by the nominee in an automobile accident prevented his coming to Washington for a meeting with the Senate committee on interstate commerce.

Railroad Employment of Women Increases

Up to 112,063 in mid-April, or 7.94 per cent of total then on pay rolls

During the three-month period from mid-January to mid-April this year the number of women employed by Class I roads continued to increase, according to the most recent figures of the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission, and the net increase during this interval was somewhat larger than in the preceding quarter. In the period ending with mid-April the number of women employed was 112,063, while the mid-January total, as reported in *Railway Age* of April 1, page 649, was 105,901.

While the number of women employed was thus increasing in the quarter, the total number of employees increased from 1,357,252 to 1,412,184, so that the women employees made up 7.94 per cent of the total in mid-April, as compared to 7.80 per cent three months before.

Year's Increase 29,957—The Class I roads employed 82,106 women in mid-April, 1943, this figure being 6.09 per cent of the total number of employees at that time, so that the net increase in the number of women working for railroads during the 12-month period ending in mid-April this year was 29,957.

As compared to mid-April a year ago, increases were shown in the number of women employed in each of the general categories of employment in which any at all were engaged except one—the maintenance of way and structures group. Here the number dropped from 3,126 to 2,741, although there was an increase shown over mid-January's 2,402 in this category. In train and engine service the number of women employees reported was 264 in mid-April, as compared to 250 in mid-January and 102 in mid-April, 1943, but the percentage of women to the total number of employees in this group is still only 0.28.

More in White-Collar Jobs—In the division including yardmasters, switchtenders and hostlers the mid-April figure this year was 53 against 13 last year; in the classification of transportation other than train and engine service there were 11,908 women employed this year, against 7,403 in last year's mid-April count. Women have always been more generally employed in the professional, clerical and general category, of course, than in other types of railroad work, but even in this group there was a further considerable increase in the

(*Continued on page 57*)

Unprecedented Award for Railroad Safety

Entire industry is honored at Harriman accolade as critics are rapped

Belying the propaganda of political origin which accuses the railroads of inattention to safety, the American Museum of Safety has bestowed upon the entire railroad industry a "Certificate of Special Commendation" in "recognition of their outstanding contribution to the war effort" accomplished with due regard to considerations of safety. This unprecedented award was made at New York on June 28 by E. Roland Harriman on the occasion of the bestowal of the "Harriman Awards" for their 1943 safety records upon the Union Pacific, Eastern District (gold medal); the Duluth, Missabe & Iron Range (silver medal); and the Charleston & Western Carolina (bronze medal). On the same occasion, the Arthur Williams Memorial Medal was presented to Charles E. Carlson, retired president of the Duluth, Missabe & Iron Range "in recognition of outstanding contribution to the conservation of human life."

Whence Criticism Comes—In his introductory remarks, before calling upon representatives of the winning railroads to receive the Harriman Medals at the hands of Mr. Harriman, R. V. Fletcher, vice-president of the Association of American Railroads and chairman of the Awards Committee of the Safety Museum, reviewed the railroads' safety record in 1943, calling attention to the ratio of three passenger fatalities per billion passenger-miles and one and a half employee fatalities per billion ton-miles—indicating that passengers were three times as safe on the railroads during this war as they were during the previous one and employees nearly six times as safe.

The criticism that has been directed against the railroads despite this record, said Judge Fletcher, makes it difficult for him "to resist the impression that much of this comment is inspired by overzealous methods of salesmanship employed by eager owners of patented articles, anxious to increase their sales." The railroads test every operating method and mechanical device which gives promise in promoting safety, said Judge Fletcher, and they adopt and apply those which are found practicable.

Safety and Roller Bearings—It has been contended, the speaker went on to say, that the wreck of the "Congressional Limited" near Philadelphia last year would have been prevented if the car-journal which failed, causing that accident, had been equipped with roller bearings. "But," said Judge Fletcher, "the public was not told that on this same train a few months previously, a car using roller bearings had a similar accident, but fortunately not at a place where the derailed car struck an impenetrable obstacle." The merit of roller bearings, said the speaker, lies elsewhere than in their contributions to safety—they are not intended primarily as a safety device. A similar criticism had been directed at the collision last December involving the "Tamiami Champion," the contention being that radio would have prevented this accident. The tales circulated as to how these two major accidents might have been prevented were characterized by Judge Fletcher as the "roller bearings myth" and the "radio myth," but he said that he would not be understood as attributing these "myths" to the manufacturers of these devices.

The certificate of special commendation awarded to all the railroads was accepted on their behalf by President J. J. Pelley of the Association of American Railroads—but, in due course, a replica of this certificate will be sent to the chief executive of each Class I railroad.

Safety Must Come from the Top—Such was the declaration of President W. M. Jeffers in accepting the Harriman Gold Medal for the Union Pacific on the eleventh occasion upon which that system has won this honor. By this assertion, said Mr. Jeffers, he meant that a railroad chief executive must believe in safety and must make this feeling obvious in his contacts with employees. By this belief, by contacts with and faith in the employees, all else that is needed, said the U. P. president, is common sense; and that, he added, is all that is needed in government.

The three different classes of Harriman Awards—gold, silver, and bronze—do not indicate the attainment of different ratios of safety, but rather are classifications of railroads with reference to their normal locomotive-mileage, the gold medal being awarded to the carrier with the best all-round safety record among railroads operating 10 million or more locomotive-miles; the silver medal being for the one-to-ten-million class; and the bronze medal for carriers with less than a million locomotive-miles. The silver medal was received on behalf of the Duluth, Missabe & Iron Range by President P. H. Van Hoven, and the bronze metal (actually also made of silver because of the shortage of bronze) by Lyman Delano, chairman of the Charleston & Western Carolina.

Gross Praises Railroads—Major General Charles P. Gross, the Army's chief of transportation, made the closing speech at the dinner, at the Waldorf-Astoria hotel, at which the presentations were made. He said that "the railroads have responded magnificently to the staggering transport demand of global war." He made a report on some of the transport phases of the war which was highly informative but was "off the record."

Presiding at the dinner was Dr. D. B. Armstrong, president of the Museum of Safety. The presentation of the Arthur Williams Medal to Mr. Carlson was made by Frank L. Jones, chairman of the Greater New York Safety Council.

Disapproves Forwarder Rates Based on Aggregate Tonnage

Forwarder rates conditioned upon an aggregate monthly tonnage have been condemned by the Interstate Commerce Commission, Division 2, in a report in the No. 28896 proceeding. The rates involved were those of Mutual Distributing, Inc., from Chicago and Minneapolis, Minn., to points in Minnesota and North Dakota.

Rate "Equalization" Argument Concluded

28300 and 28310 proceedings are now submitted to I. C. C. for decision

Erratum

In last week's issue, in the report on the argument in this proceeding, the record of the position of the trunk lines was "lost" by the printer. The paragraphs containing this account were incorrectly placed with another "story" on page 1222. The misplaced paragraphs begin with the subheading "The Trunk Line Position" and, to make sense, should be transferred to page 1225, following the paragraphs appearing under the sub-heading "Would Force l.c.l. Rates Up."

Oral argument in the Interstate Commerce Commission's general class rate and classification investigation, Nos. 28300 and 28310, was concluded on June 23 after sessions extending over a period of nine days at the commission's headquarters in Washington, D. C. Originally scheduled to extend over ten days, the argument closed a day earlier than had been thus planned when some counsel gave up part of their assigned time while others filed statements in lieu of oral presentations.

Began 5 Years Ago—The proceedings which the commission instituted five years ago on its own motion is now submitted for decision. In the No. 28310 investigation of the Consolidated Freight Classification there has been issued the proposed report wherein Examiners Paul O. Carter and William J. Koebel have recommended establishment of a uniform freight classification with ratings applicable throughout the country. As noted in the *Railway Age* of December 11, 1943, where the proposed report was reviewed, the examiners would set up 30 classes designated in percentages of the present first class, or class 100, with a range from class 400 to class 11. No proposed report has been issued in No. 28300, the investigation of the class rate structure.

Proceedings at the argument, subsequent to those reported in last week's issue, included presentations of additional interests opposed to changes in the rate structure or classification, and rebuttal arguments.

The New England View—Governors of the six New England states, who are opposing the southern governors' demand for a uniform class rate structure and classification, were represented by Henry E. Foley of Boston, Mass. Mr. Foley spoke also for various New England traffic and industrial organizations.

Among other arguments he criticized the cost data prepared by the commission's Bureau of Transport Economics and Statistics under the direction of Ford K. Edwards, saying that the "numerous opportunities for error" in the compilations left the commission in a position where it could not be "comfortable in the thought that the errors offset each other." Moreover, it was

Mr. Foley's contention that if the Edwards studies have validity, they understate railroad operating costs in the South.

In the latter connection, he pointed out that the studies were based on 1939 figures when the volume of traffic in the South was increasing as a result of the defense program. The cost showing was improved by this "high density" which would not be present in the South in a "normal" year, Mr. Foley insisted. And, he added, it cannot be anticipated that current favorable conditions will continue in the post-war era—"as your honors have said repeatedly in your reorganization cases."

Uniformity and Reason—With respect to the classification, Mr. Foley argued that there had been no showing of unreasonableness as to particular ratings. He insisted that such a showing was necessary before the classification could be condemned as unlawful, because "lack of uniformity is not, itself, unreasonable." E. A. Delaney, deputy attorney general of Pennsylvania, had meanwhile spoken briefly to endorse the argument of Parker McCollester of New York, whose presentation on behalf of New York, New Jersey, Pennsylvania and Maryland, was reported in last week's issue. Thus Mr. Delaney took the position that there was nothing in the record to justify the ordering of any change in the present rate structure.

Southern industrial interests, who oppose class-rate changes because of their fear that adjustments in commodity rates might follow, included the Southeast Shippers' Conference, represented by A. J. Ribe; Southern Paper Manufacturers' Conference, represented by Wilbur LaRoe, Jr.; the Tennessee Products Corporation and Southern States Industrial Council, represented by C. E. Widell; and L. A. Gossage, traffic manager of T. L. Herbert & Sons, and affiliates. Also, A. G. T. Moore, traffic manager of the Southern Pine Association, who didn't want commodity rates talked about at all. Lumbermen, he indicated, are satisfied with their present commodity-rate adjustment, and don't want to be "dragged into this case" in any way.

South's Views Not Unanimous—Among the statements filed was that of E. H. Thornton, general manager of the New Orleans Joint Traffic Bureau, who urged the commission to preserve existing differentials on coastwise routes through Gulf of Mexico ports if it requires a revision of class rates. Another statement was filed by H. G. Freas, principal transportation rate expert for the Railroad Commission of California, who also represented the Corporation Commission of Arizona and the Public Service Commission of Nevada. Mr. Freas expressed opposition to changes in the rate structure or classification. In the latter connection he did not object on principle to a uniform classification, but he cited differences in transportation conditions to emphasize his disagreement with the examiners' view that uniformity is practicable as to all articles.

Arguing first on rebuttal was J. C. Murray, representing the Southwestern Steering Committee comprised of southwestern interests advocating changes. He took exception to motor-carrier arguments to the effect that rates in the Southwest should be higher than in Official and Southern territories.

J. V. Norman, counsel for the Southern Governors' Conference, then addressed himself to the contention that there is "nothing to this proceeding," because a relatively small volume of traffic moves on class rates. The railroads, he said, had refused to make a traffic study which might have answered this and other questions; and he went on to insist that any doubts as to the importance of class traffic should thus be resolved against the carriers.

With respect to the contention that virtually all of the present class rates had been fixed by the commission, Mr. Norman pointed out that the commission has power to change what it has fixed. And he went on to argue that changed conditions warrant the uniform adjustment sought by the southern governors.

Constant vs. Variable Costs—Railroad counsel speaking in rebuttal were T. P. Healy, general solicitor of the New York Central; J. F. Eshelman, assistant general counsel of the Pennsylvania; J. P. Plunkett, general attorney of the Great Northern; and W. L. Grubbs, assistant general solicitor of the Louisville & Nashville. The first three pointed up again railroad criticisms of the Edwards cost studies, and of the position taken by the motor carriers that such costs should be used in rate-making. As Mr. Plunkett put it, the railroads are opposed to including constant expenses in a formula designed to fix rates on individual commodities; they take the position that such expenses should be considered only in the fixing of the general rate level.

In concluding the carriers' rebuttal, Assistant General Solicitor Grubbs of the L. & N. contended that southern interests advocating changes were only making a start on the class rates. He predicted that they would assail the commodity-rate adjustment once they got class-rate parity. Later on he warned that the South's relatively low commodity rates "bear a very direct relation" to its class rates; and southern roads cannot maintain the former if they must also maintain low class rates.

The record, as Mr. Grubbs read it, showed that no one is as solicitous of growing southern industry as the southern railroads. Addressing himself to the claim that the present rate adjustment retards industrial development in the South, the L. & N. assistant general solicitor asserted that such a basis for the southern governors' case "utterly collapsed" on the record. "Under the revealing rays of the truth," he went on, "they have forsaken their case and run for refuge to Dr. Edwards' studies."

More Raps for Edwards Formula—Mr. Grubbs proceeded to criticize the Edwards formula, especially the exclusion of the Pocahontas lines from Official Territory. The "fundamental question," as he stated it, is whether a change should be made in the present distribution of transportation benefits in the South. And he insisted that the present distribution with the relatively low commodity rates meets the needs of southern industry.

In closing, Mr. Grubbs anticipated the possibility of a decision adverse to his point of view, and asked that any commission report which might require a rate adjustment be given a "proposed status," so that the railroads could make a traffic test of the results. This request was opposed by Mr. Norman, who said that the railroads had ample opportunity to make traffic tests, but failed to do so.

The Dean of Railway Journalists Passes On

The venerable Braman Blanchard Adams, who was senior associate editor of *Railway Age* at the time of his retirement at the end of 1936, died at his home in Mount Vernon, N. Y., on June 27, in his 94th year.

Mr. Adams was a member of the editorial staff of *Railway Age* and its predecessor publications for 50 years—and was 85 years of age when he retired. Prior to entering the field of railway journalism, he had been in active railroad work for 21 years (as clerk, telegrapher, agent and yardmaster) on the Western R. R. in Massachusetts (now a part of the Boston & Albany).

Mr. Adams was born in 1851, began his railroad career in 1865, and entered the service of the Railroad Gazette (one of the predecessors of the present *Railway Age*) in 1887. His activities as a transportation journalist were multifarious, but his specialties were operating practices and signaling—in which fields he was for many years regarded as among the leading authorities.

No July Fourth Holiday—Nelson

Following last week's meeting of the War Production Board's Production Executive Committee, a statement by W. P. B. Chairman Donald M. Nelson was made public, calling upon management and labor to observe full working schedules in all war plants on July 4. "The best way to celebrate Independence Day this year," said Mr. Nelson, "is to devote all of our energy to backing up our fighting men. The invasion of France and actions being fought in other theaters make it more than ever imperative that we get war production up to schedule and keep it there. Independence Day this year must be a day of unbroken production on all important war programs."

O. D. T. to Handle Civilian Truck Rationing Process

Rationing of new trucks and other commercial motor vehicles has been turned over to the Office of Defense Transportation, effective July 1, the War Production Board announced July 24. Through O.D.T. General Order No. 44, making this change operative, it is expected that more expeditious handling can be given applications for new trucks for essential civilian use, it was explained.

The W. P. B. pointed out that, since its Conservation Order M-100 established truck rationing as a joint O. D. T.-W. P. B. undertaking on March 9, 1942, the stockpile of such equipment has been practically depleted. Since that time 239,096 vehicles have been allotted for civilian use, it was reported, including 33,084 heavy trucks,

133,888 medium trucks, 49,455 light trucks, and 22,669 trailers.

Under the 1944 truck production program, about 89,000 medium and heavy trucks will be made available for civilian use. It was emphasized that the transfer of truck rationing machinery to the O. D. T. will result in no relaxation in requirements governing allocation of equipment for civilian use. Programs for the production of trucks to meet the requirements of the armed services will continue to be the responsibility of the W. P. B., it was stated.

I. C. C. Service Orders

Under General Permit No. 2, issued in connection with Interstate Commerce Commission Service Order No. 207, the restrictions on holding for orders, reconsignment or diversion of cars loaded in states east of the Mississippi river and south of the Potomac and the southern border of Kentucky with fresh or green fruits, vegetables or melons, have been modified so far as they applied to such holding of cars at Birmingham, Ala., Atlanta, Ga., or Nashville and Chattanooga, Tenn. The permit was effective June 17.

Service Order No. 214, effective June 26, required the Long Island forthwith to unload one car of coke held an undue length of time at Corona, N. Y. The provisions of Service Order No. 213, establishing procedures for preferential treatment of invalid service men on passenger trains, are outlined on another page in this issue.

By Amendment No. 5 to Service Order No. 68, that order's provisions with respect to minimum weight requirements on carload shipments transshipped from ocean-going vessels have been modified so as not to apply to a single consignment consisting of two or more open-top cars loaded with bulk freight, provided all except one of such cars for each consignment is loaded to not less than the tariff minimum weight or the full cubical or visible capacity, and that charges are assessed on the remnant lot on a weight of 10,000 lb. or more. The amendment is effective July 28.

Would Fix Circuity Limits on Grain Routes

Circuity limitations would be imposed in connection with general relief from the long-and-short-haul clause with respect to rates on grain, grain products, and related commodities from and to points within the western district if the Interstate Commerce Commission adopts a proposed report by its Fourth Section Board. The proposed report is in Fourth Section Application No. 16500 and related proceedings.

The Fourth Section Board got the case after a prior proposed report by Examiner W. A. Disque had called attention to the "extreme circuity of many of the routes." The carrier applications are for permanent relief, temporary relief having been granted pending disposition of the present proceedings.

The proposed report states that the board "considered all that has been shown and urged against circuity limitation," but it nevertheless concluded that "efficient and economical operation of the railroads as a unit, particularly in time of national emergency, requires that the traffic be confined to reasonably direct routes." Thus the board would have the commission grant permanent relief with stipulation that it shall not apply:

(1) Where the distance over the short tariff line or route is 150 miles or less and the longer line or route is more than 70 per cent circuitous, (2) where the distance over the short tariff line or route exceeds 150 miles but does not exceed 1,000 miles, and the longer line or route is more than 50 per cent circuitous, except that where the distance over the short tariff line or route exceeds 150 miles and the distance over the longer line or route does not exceed 255 miles, relief will apply to such longer line or route even though it is more than 50 per cent circuitous, and (3) where the distance over the short tariff line or route exceeds 1,000 miles and the longer line or route is more than 33⅓ per cent circuitous, except that where the distance over the short tariff line or route exceeds 1,000 miles and the distance over the longer line or route does not exceed 1,500 miles, relief will apply such longer line or route even though it is more than 33⅓ per cent circuitous.

Burlington Tests Radio

On June 22, the Chicago, Burlington & Quincy conducted a demonstration test of radio equipment for communication between a yard office (at 14th Street in Chicago) and a car attached to trains on a round-trip between the Union Station in Chicago and Downers Grove, Ill., a distance of 20 miles. Executive, operating and communication officers of several railroads, as well as representatives of the Interstate Commerce Commission, the Federal Communications Commission and the press, were guests on this trip.

The experiments being conducted on this railroad with the co-operation of the Bendix Corporation are for the purpose of exploring and developing the practicability and need for radio communication for railroad operating services. It is the thought of this road that radio communication can be used to supplement rather than supersede the telephone, telegraph and automatic signaling facilities.

Negotiations for the Burlington-Bendix experiments were begun on December 29, 1943, and concluded on February 3, 1944. These experiments are being conducted in the frequencies above 150 megacycles where channels are said to be less crowded and, therefore, more readily available for permanent assignment. In order to conduct experiments in these high frequencies, it was necessary to obtain release from the Army of certain equipment embodying war-developed inventions and im-

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Photo Courtesy D. & R. G. W.

A Denver & Rio Grande Western Train on the Climb Through Eagle River Canyon from the Colorado River to the Continental Divide at Tennessee Pass

provements, as well as a permit from the Federal Communications Commission. This permit was issued May 3, and the installation was completed June 13.

The first series of tests is to determine the practicability and usefulness of the two-way telephone conversation by radio between the assistant superintendent's office and the locomotives, as well as cabooses in yard service in the Chicago area, which extends west from Chicago to Congress Park, about 13 miles. The Burlington has as many as 75 switching crews employed in these yards. Further experiments will include tests of radio communication between the locomotives and the cabooses of moving freight trains on the road, as well as between yard offices and switching crews at various locations on the Burlington.

New O. D. T. Head in Puerto Rico

The Office of Defense Transportation has announced the appointment of Ormond R. Bean of Portland, Ore., as regional director for the O. D. T. for Puerto Rico, succeeding Charles G. Anthony, who has resigned to return to private business after serving in that capacity since September, 1942. Mr. Bean will leave for San Juan within the next few days, the statement indicated. He has been O. D. T. regional director for Hawaii, with headquarters in Honolulu, since August, 1943, and for four years prior to that he was public utilities commissioner of Oregon.

Senate Passes Bill Proposing I. C. Act Amendment

The Senate on June 22 passed S. 1473, the bill introduced last year by Senator Wheeler, Democrat of Montana, to amend the Interstate Commerce Act in various respects as suggested by the Interstate Commerce Commission.

The proposed amendments would give the commission authority to prescribe rules for the extension of credit by express companies, and give it the same emergency powers over water carriers that it now has over railroads and motor carriers. Other provisions relate to the service of notice in commission proceedings, and to the commission's authority with respect to examining accounts of companies furnishing railroads with cars or protective service to perishable freight against heat or cold.

Daniel S. Ellis Nominated for Manager of A. S. M. E.

Following a semi-annual meeting of the American Society of Mechanical Engineers, at the William Penn hotel, Pittsburgh, Pa., June 19 to 22, announcement was made of the nominations for the 1945 officers of A. S. M. E. Election is to be held by letter ballot of the entire membership, with September 26 set as the closing date.

Nominee for president is Alex D. Bailey, vice-president, Commonwealth Edison Co., Chicago. Nominations for vice-president are: David Larkin, vice-president and general manager, Broderick & Bascom Rope Co., St. Louis, Mo.; John E. Lovely, vice-president, Jones & Lamson Machine Co., Springfield, Vt.; and Thomas S. McEwan, vice-president, McClure, Haddon & Ortman, Inc., St. Louis.

Nominated as managers are: Daniel S. Ellis, vice-president charge of manufacturing, Lima Locomotive Works, Inc., Lima, Ohio; Arthur J. Kerr, district manager of sales, Pittsburgh Equitable Meter Co., Tulsa, Okla.; and Herman George Thielscher, mechanical engineer, Potomac Electric Power Co., Washington, D. C.

Freight Car Loading

Loadings of revenue freight for the week ended June 24 totaled 881,267 cars, the Association of American Railroads announced on June 29. This was an increase of 2,106 cars or 0.2 per cent above the preceding week, an increase of 120,337 cars or 15.8 per cent above the corresponding week last year, and an increase of 27,849 cars or 3.3 per cent above the comparable 1942 week.

Loading of revenue freight for the week ended June 17 totaled 879,161 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For the Week Ended Saturday, June 17			
District	1944	1943	1942
Eastern	165,006	170,216	158,319
Allegheny	196,786	187,010	186,099
Pocahontas	55,688	57,783	56,831
Southern	120,299	116,555	123,453
Northwestern	134,294	136,037	137,810
Central Western	130,996	125,456	117,882
Southwestern	76,092	75,229	64,519
Total Western Districts	341,382	336,722	320,211
Total All Roads	879,161	868,286	844,913
Commodities			
Grain and grain products	45,332	49,708	38,946
Live stock	13,908	11,198	11,031
Coal	181,574	176,916	164,570
Coke	15,303	14,217	14,239
Forest products	48,104	45,017	49,970
Ore	83,020	86,365	92,264
Merchandise l.c.l.	104,485	98,210	94,075
Miscellaneous	387,435	386,655	379,818
June 17	879,161	868,286	844,913
June 10	874,193	854,486	832,635
June 3	810,772	667,609	854,689
May 27	869,860	853,783	795,621
May 20	871,105	843,842	837,676
Cumulative Total, 25 Weeks	20,170,127	19,339,538	20,209,983

In Canada.—Carloadings for the week ended June 17 totaled 71,999, as compared with 71,661 for the previous week, and 68,468 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada:	Total Revenue Cars Loaded	Total Cars Rec'd from Connections
June 17, 1944	71,999	37,151
June 10, 1944	71,661	37,291
June 3, 1944	70,579	37,210
June 19, 1943	68,468	43,291
Cumulative totals for Canada:		
June 17, 1944	1,654,852	946,299
June 19, 1943	1,518,374	942,705
June 20, 1942	1,522,623	777,241

Would Release Surplus Planes

Release for commercial use of surplus military aircraft, including some of the newer models, is recommended in a report which the Senate committee on military affairs has received from its war contracts subcommittee. The report, entitled "Disposal of Surplus Aircraft and Major Components Thereof," was prepared for the subcommittee by Harvard University's Graduate School of Business Administration under the direction of Dr. Melvin T. Copeland.

It sets up what the authors conceive to be the proper objectives of a plane-disposal policy, and outlines recommendations for disposal procedures. It also embodies a suggestion for selling planes "at sharply reduced prices" for certain "noncompeting" uses—after all commercial air line needs and foreign demands are met. The "noncompeting" uses would be "certain contract cargo operations," such as the movement of fresh fruits and vegetables.

"Noncompeting uses," says the report, "are defined as those which do not compete with any traffic which would otherwise develop without low-price surplus equipment, i. e., the user would not otherwise be acquiring newly produced aircraft. Certain contract cargo operations, such as the movement of fresh fruits to northern industrial markets, might for instance be possible only with low-cost surplus equipment. Such use of surplus planes, especially by small owner-operators who might be able to operate with low overhead costs, may give an otherwise unrealizable impetus to all-cargo air transportation. Both to insure air safety and to prevent disruption of sound air transport development, the Civil Aeronautics Board should control the disposition and use made of any such low-price surplus planes."

Would Give Transport Priorities to Servicemen

Representative Hendricks, Democrat of Florida, has introduced H. R. 5116 to provide transportation priorities for servicemen on furlough. The bill would authorize the Secretary of War and Secretary of the Navy to establish the priorities, but it does not set forth the details of how they should be worked out.

I. C. Wins Safety Award Second Time

The Illinois Central has been awarded the green "S" pennant of the National Safety Council for continuing in 1944 the progress in accident prevention among workers which won for the railway the Council's Distinguished Service to Safety award for 1943. During the first five months of 1944, I. C. employees reduced their reportable casualty rate to 6.97 per million man-hours, as compared with 7.36 and 8.09 respectively during the corresponding periods of 1943 and 1942. The plaque was awarded in 1943 for the improvement made in rising from eleventh place in 1942 to fourth place in 1943 among "group A" railroads.

Fiscal '45 Appropriations

President Roosevelt has signed the recently-enacted Independent Offices and War Department Civil Functions appropriation bills for the fiscal year ending June 30, 1945, which carry $9,171,700 for the Interstate Commerce Commission and $51,344,000 for rivers and harbors work. This final I. C. C. appropriation provides only $500,000 for the Bureau of Valuation, the commission having failed in its intensive efforts before the Congressional appropriations committees to restore that item to the $655,000 approved by the Bureau of the Budget.

The Independent Offices bill also carries $99,000,000 for the Public Roads Administration, including $40,000,000 for the fed-

eral-aid highway system, $40,000,000 for access roads, and $10,000,000 for the "strategic network." The President has also signed the War Agencies and Department of Labor-Federal Security Agency appropriation bills. The former provides $17,000,000 for the Office of Defense Transportation and $500,000 for the President's Committee on Fair Employment Practice. Labor-Federal Security carries $2,499,000 for operations of the Railroad Retirement Board under the Railroad Retirement Act and appropriates $308,817,000 to the Treasury's Railroad Retirement Account; also, it provides $607,000 for the National Mediation Board and National Railroad Adjustment Board.

Retirement Benefit Payments $11,409,000 in April

Retirement benefit payments certified during April totaled $11,409,000, an increase of $148,000 over the March figure, according to the June issue of the Monthly Review of the Railroad Retirement Board. At the end of April, 138,095 employee annuities were in force, slightly more than the number in March. Survivor annuitants, numbering 3,647, received an average monthly benefit of $31.90, whereas 567 death-benefit annuitants of the 1935 Act received payments averaging $35.47. Lump-sum death benefits certified during the month numbered 1,382; the average amount paid was $396.04.

Is Filling Many Jobs—Except for December, 1943, placements in April were the most numerous in the experience of the Board's employment service. Workers were placed in 71,600 job openings during the month, a gain of 10,700 over March. Total placements for the current fiscal year reached 491,000, compared with 141,000 for the corresponding period of 1942-43. While interregional placements, orders, and openings in April declined somewhat from March, referrals rose to 90,000. Approximately 28,000 Mexicans were in railroad service at the end of the month. The number of unfilled positions on active orders at the beginning of May dropped to 107,000 from 122,000 in the previous month.

A decline of approximately one-third from the March level characterized unemployment insurance operations in April. Applications for certificates of benefit rights dropped 32 per cent from March. Claims for benefits received during the month totaled 2,180, compared with 3,240 during the previous month. In April, unemployed railroad workers received some 1,830 payments aggregating $47,300, approximately $31,000 less than in March. Benefit accounts were opened during the month for 220 workers and 50 accounts were closed because of exhaustion of benefit rights.

Seeks High School Help—The Board's employment service is sponsoring a program for the enlistment of high school students for summer track-maintenance work. Railroad officers who indicate an interest in using students are assisted by representatives of the employment service in carrying out the program. State departments of education and local school boards are requested to aid in recruitment of youths in their territories. To insure proper guidance of the boys while in the camps or at work, and to obtain the consent of the parents and the school authorities, each railroad adopting the program is asked to submit a "letter of assurance" which constitutes an agreement to meet specified standards for the general welfare and safety of the youthful maintenance-of-way workers. An extensive and active publicity campaign has been undertaken in support of the program.

The Board regulations pertaining to unemployment insurance contributions have been revised to enable employers to pay contributions on the net compensation reported for each month, making allowance for adjustments reported annually or quarterly.

Photo Courtesy D. & R. G. W.

A Pleasing Variation in Car Checkers

Veteran railroaders of four and seven months, respectively, these sisters—Dorothy Pennington, 19, (left) and Mrs. Edna Berry, 21, record freight car numbers in the Denver & Rio Grande's Grand Junction yards. Possessing the caution and "savvy for details" required for the job, Mrs. Berry notes: "There's nothing to fear if a person observes all the safety rules drawn up by the railroad to protect us."

* * * *

Specifies Off-Route "Key Points" for Rock Island Affiliate

Reporting on reconsideration of a proceeding involving motor truck operations of the Rock Island Motor Transit Company, affiliate of the Chicago, Rock Island & Pacific, the Interstate Commerce Commission, Division 5, has decided that, in imposing its so-called "key point" restriction, it can specify key points beyond the termini of the route involved. The report is in No. MC-29130 (Sub-No. 8).

The route involved is between Atchison, Kans., and Trenton, Mo., and the certificate originally embodied a condition limiting shipments handled in the highway service to those having a rail movement also. Transit petitioned for relief from that condition because of its desire to provide a long-distance all-motor service over the route in conjunction with other routes operated by it.

The commission found that the proposed all-motor service was not required by public convenience and necessity; but it did extend such relief as may be afforded by the substitution of the "key points" condition for the "prior or subsequent rail haul" requirement. Topeka, Kans., Beatrice, Nebr., Kansas City, Mo., Trenton, and Centerville, Iowa, were named as key points. Of its altered views with respect to off-route "key points," the commission had this to say:

> In the prior report we discussed the naming of key points in connection with the proposed route, but concluded without extended consideration that we could not specify key points beyond the termini of the route sought without going beyond the scope of the application. In this view we now conclude that we were in error. There is no reason why in granting authority to operate between Trenton and Atchison we cannot provide that *such authority* shall not be used, in connection with authority already held, in the performance of an all-motor service to or from certain points lying on connecting routes already authorized. The naming *in connection with operation herein authorized* of key points located on such already authorized routes would not work any diminution of any authority which applicant now holds over such now authorized routes and it is not intended that our finding herein shall be so construed, even though such present authority is held subject to such restrictions as we may find it necessary to impose to insure that the service shall be auxiliary to and supplemental of train service.

Hearing on Railroads' Radio Use Begins September 13

The Federal Communications Commission has designated September 13 for the initial hearings to begin in the matter of investigating the establishment and use of radio communications systems in railroad operations, and has appointed a committee composed of Commissioners Walker (chairman), Case and Jett to preside at the hearing.

The commission pointed out that these preliminary hearings are for the purpose of developing information which may be of assistance and guidance to all parties in

carrying out their further programs on the subject of the use of radio on railroads. No immediate determination of policy is contemplated, but the commission expects to keep the matter open for a period sufficient to enable all persons to complete all reasonable experimentation and to acquire all necessary data. Ample time will be permitted for experimentation and development of further data, and further hearings will be held in the future as the need therefor may appear.

Testimony of witnesses from such organizations as the Association of American Railroads, Aeronautical Radio, Inc., Civil Aeronautics Administration, Radio Technical Planning Board, and the War Department will be taken at the hearing.

The commission said that interest in the use of radio by railroads has reached an all-high peak as witnessed by the fact that 30 applications for construction permits have been filed since May 1. Some of these have already been granted. Interest is also being shown in carrier-current as well as space radio systems, it was explained. The Denver & Rio Grande Western has requested that frequencies be assigned to it on a regular basis and has filed an application for such facilities, the commission pointed out.

Senate Bill for Permanent Negro Job Commission

Senator Chavez, Demoerat of New Mexico, has introduced for himself and five other senators a bill to create a permanent "Fair Employment Practice Commission" to take over the work of President Roosevelt's Committee on Fair Employment Practice. The bill, S.2048, is like H.R. 3986 previously introduced in the House by Representative Scanlon, Pennsylvania Democrat.

Sponsors of the Senate bill, in addition to Senator Chavez, are Senators Downey of California, Wagner of New York, Murray of Montana, Democrats; Capper of Kansas, and Langer of North Dakota, Republicans.

A Centenary the L. N. E. R. Was Unable to Observe

The London & North Eastern recalls that June 18 of this year marked the centennial of a 303-mile railway journey from Euston Station (then "Square"), London, to Gateshead, or as the trip was then spoken of "from Thames to Tyne."

Immediately following completion of a 21¼-mile stretch of line, known as the Newcastle & Darlington Junction Ry., and the last gap between north and south, the historic trip was made, the route embracing seven different railway lines. Traveling time, including all stops, was 9 hr. 21 min., and average speed 37 m.p.h. (Immediately prior to World War II, the L. N. E. R.'s streamlined "Silver Jubilee" express, with a 35-mile shorter route, linked London & Newcastle in 4 hr.)

In those days, says the L. N. E. R. "Victorians delighted on the opening of new railways." One "grand opening" train from York, consisting of 39 first-class carriages, hauled by three engines, followed the record-breaking London train to Gateshead. It is said an "amazing" reception was held. "Every spot which could command a view of the line was covered with anxious spectators." Five hundred people that night participated in a banquet at Newcastle. "Glees were sung; the band played and a comedian entertained. There were 27 toasts, pledged to almost every conceivable person." As one Victorian put it —"at last, just before midnight, they rose from the six-hour banquet, staggered out into the cool night air and so departed to bed."

Observes the current L. N. E. R. press release: "The pity of it that the war has prevented the L. N. E. R. from celebrating the centenary of what was indeed a landmark in railway history."

Asks Justice Department to Look into Utah Steel Rate

The intervention of the Department of Justice in rate-making processes has been sought by Senator Elbert D. Thomas, Democrat of Utah, in connection with shipments of steel from the new government-built Geneva plant near Provo, Utah, to the Pacific coast, according to a June 20 letter to Attorney General Biddle which has been made public.

Pointing out that the "ultimate success of this plant will depend upon the price of the product and one of the costs which has always hindered manufacturing expansion in the Rocky Mountain country has been freight rates," the Senator went on to say that "sometime ago we secured a reduction of the freight rates east for a number of our manufactured products. The largest outlet for steel, however, will probably be the Pacific coast and the freight rate from Utah points to Pacific coast points is at the present practically as high as the same rates from Chicago. Therefore, it will be only a matter of time before there will be demands made by the people of our state for a change of these rates.

"For this reason," the letter continued, the department, and particularly that Anti-Trust Division, were asked to "become familiar with conditions governing our freight rates there. Inasmuch as the government now takes practically all of the product and will continue to do so during the war," it added, "it is hardly fair that the government should be required to pay an excessive freight rate."

The Attorney General was asked to "determine whether or not adjustments can be brought about and learn whether or not the government is being fair to itself in regard to these rates." In concluding, the Senator said, "Please let us see that no mistakes are made and that failure of this great industry shall not be charged to a discriminatory freight rate."

New Jersey's Tax Compromise Law Held Invalid

On June 22, the State of New Jersey's 1941 and 1942 railroad tax compromise legislation, which waived interest payments totaling $24,000,000 on back taxes assessed against railroads in that state and permitted the payment of $34,000,000 of principal amount in installments, was set aside by the court of errors and appeals. The court, highest judicial body in the state, affirmed the finding of Vice-Chancellor Wilfred H. Jayne, who held in a decree that the settlement acts were invalid on the grounds that cancellation of the interest amounted to a gift of state funds in violation of a provision in the state constitution. Companies affected by the decision include the Central of New Jersey; the Delaware, Lackawanna & Western; the Erie; the Lehigh Valley; the New York Central; and the Reading.

Pennsylvania Goes to Court on Extra Pay Demand

The Pennsylvania has filed in the federal district court for the District of Columbia a complaint against 49 of its firemen and helpers, contesting a demand made on behalf of such employees by the Brotherhood of Locomotive Firemen & Enginemen for a day's pay in addition to road-trip wages for their work in connection with the intra-terminal movement of passenger trains between Washington's Union Station and the storage yard there. The complaint states that compliance with the demand would cost $10,000 a month.

It seeks a court declaration as to the rights and obligations of the railroad and the employees under a contract or agreement dated January 10, 1941, the B. of L. F. & E. having served written notice on May 31 that effective June 30 the intra-terminal moves would be interpreted as service for which the firemen and helpers would be entitled to a separate day's pay. The P. R. R. takes the position that the agreement provides for the intra-terminal work at "back-out pay" rates.

Says St. Lawrence Seaway Won't Harm Railroads

In constructing the St. Lawrence seaway the government would "not be harming the railroads," but would be making it possible "to handle freight traffic for which carrying capacity now in existence will not be adequate," according to the present view of N. R. Danielian, former director of the Department of Commerce's St. Lawrence Survey. Dr. Danielian, now director, Programs and Reports Staff, Foreign Economic Administration, recently answered for Senator Aiken, Republican of Vermont, a series of questions about the St. Lawrence project, and the correspondence was inserted into the June 23 issue of the Congressional Record by Senator Ferguson, Republican of Michigan.

Will "Create" Traffic—To the question as to the possible effect upon the railroads, Dr. Danielian replied that the seaway would increase the country's freight transportation capacity by not more than ten million tons annually. He calculated that if that volume were all diverted from the railroads, the diversion would amount to only one per cent of total railroad traffic. But the doctor does not expect such a diversion; for he anticipates that "cheap" transportation on the waterway will create new traffic which does not now move at all, while the growth of the country's population will result in other new traffic. He also looks ahead to the $135,000,000,000 annual income which "financial and industrial leaders" are talking about for the post-war period, suggesting that this will call for additional transport facilities.

"Railroad plant and rolling stock," the doctor says in that connection, "were geared, prior to the war, to a rate of traffic based upon a national income which during the 1930's ranged between forty and ninety billion dollars a year. Since then there has been much depreciation of railroad equipment without the opportunity for replacement. Railroad managements have been able to recoup a part of the value of their property through increased revenues. After the war they will have to expand greatly their facilities for freight and passenger service. The St. Lawrence would help carry the larger amount of traffic resulting from greater economic activity, during the summer peak of freight traffic."

Might Force Lower Rates—Finally, the doctor suggests that competition of the water carriers using the seaway "might force the railroads to reduce their freight rates," which he said would result in increased rail traffic, a development "beneficial to the American people." He added that "certainly there is nothing in this situation that can hurt railroad labor."

Transportation Librarians Meeting in Philadelphia

A round-table discussion on the organization and development of transportation libraries was held by transportation librarians at Philadelphia, Pa., on June 20, during the annual conference of the Special Libraries Association, with which they are affiliated.

Among the subjects discussed were the position of the library within the organization—i.e., departmental versus general company libraries—and library publicity. Papers describing libraries in the air transport, railroad, street railway and water carrier branches of transportation were read by librarians in these fields.

Librarians of the following transportation organizations were among those attending: Baltimore & Ohio, Pennsylvania, Bureau of Railway Economics of the A. A. R., Interstate Commerce Commission, Public Roads Administration of the Federal Works Agency, American Airlines, Pan-American Airways, Curtiss-Wright Corporation, Lockheed Aircraft Corporation, United Aircraft Corporation, Civil Aeronautics Administration, United States Maritime Commission, Capital Transit Company, Canadian Car & Foundry Co., and *Railway Age*.

A. S. M. E. Meeting in Pittsburgh Discusses Car Materials

At the semi-annual meeting of the American Society of Mechanical Engineers, held at the William Penn Hotel, Pittsburgh, Pa., on June 19 to 22 inclusive, the subject of modern structural materials for railway cars was discussed at a joint session of the Railroad division and the Metals Engineering division on the afternoon of the second day. The meeting was presided over by J. G. Adair, chairman of the Railroad division and mechanical engineer, Bureau of Locomotive Inspection, Washington, D. C. J. H. Romann, chairman of the Metals Engineering division, presided during part of the session.

Lightweight Materials—Three formal papers on the subject of the meeting were presented in sequence and followed by a general discussion. These papers included "The Development and Trend in Modern Structural Materials for Railroad Rolling Stock" by S. H. Badgett, mechanical engineer, Pressed Steel Car Company, Inc., Pittsburgh, Pa.; "Structural Material for Railroads" by H. W. Gillett and S. L. Hoyt, Battelle Memorial Institute, Columbus, Ohio; and "Use of Aluminum in Railway Construction" by A. H. Woollen, railway division engineer, Aluminum Company of America, Pittsburgh, Pa. Mr. Badgett's paper analyzed the characteristics of various types of steel, magnesium and aluminum as used in railway rolling stock. He emphasized the improvements in steel-making practice and said that when heat treatment does not give the desired physical properties, the use of alloys at somewhat increased cost must be resorted to. The second paper, read by Dr. Hoyt, also discussed the use of modern materials in railway equipment including cars and locomotives, and stressed the important part which recent metallurgical developments have played in securing the most efficient use of these materials. Mr. Woollen confined his remarks to the use of light alloys, primarily aluminum in railroad rolling stock in which it has passed the experimental stage. He said that fabricating methods have now been largely standardized and present no particular difficulties to equipment builders.

Specialties Too Heavy—In the discussion which followed presentation of these three papers, several members commented on the rigid deflection limit in present A. A. R. passenger car specifications which they said present an unnecessary hardship to the designers who want to use either aluminum alloys or stainless steel as the principal structural material. It was recommended that individual car builders specialize in the respective types of construction for which they have the necessary shop equipment and perfected fabricating methods. In attaining minimum car weights, it was pointed out that the present relatively heavy weight of most car specialties constituted a definite challenge to the manufacturers of this equipment.

Following the general discussion of materials utilized in building railway equipment, a paper "Draft Gear Action in Train Service" was presented by title, the author being O. R. Wikander, mechanical engineer, Ring Spring Department, Edgewater Steel Co., Pittsburgh, Pa. This paper consisted primarily of a mathematical analysis of the characteristics of draft gears, based upon a study of the mechanics of an elastic bar subjected to external forces corresponding to those acting on trains under various conditions of service. Numerical examples were given, showing the application of equations given in the table to assumed test trains.

Loading Estimates 4.1 Per Cent Low in Last '43 Quarter

A study of the accuracy of carloadings estimates by the regional Shippers Advisory Boards for the fourth quarter of 1943 made recently by the Car Service Division of the Association of American Railroads disclosed that, while the total for all 13 boards was 4.1 per cent underestimated, the percentage of accuracy of the estimates for certain regions and certain commodities showed much larger variations from the actual figures than the national average would indicate.

In releasing the figures showing the comparative accuracy of the estimates made for

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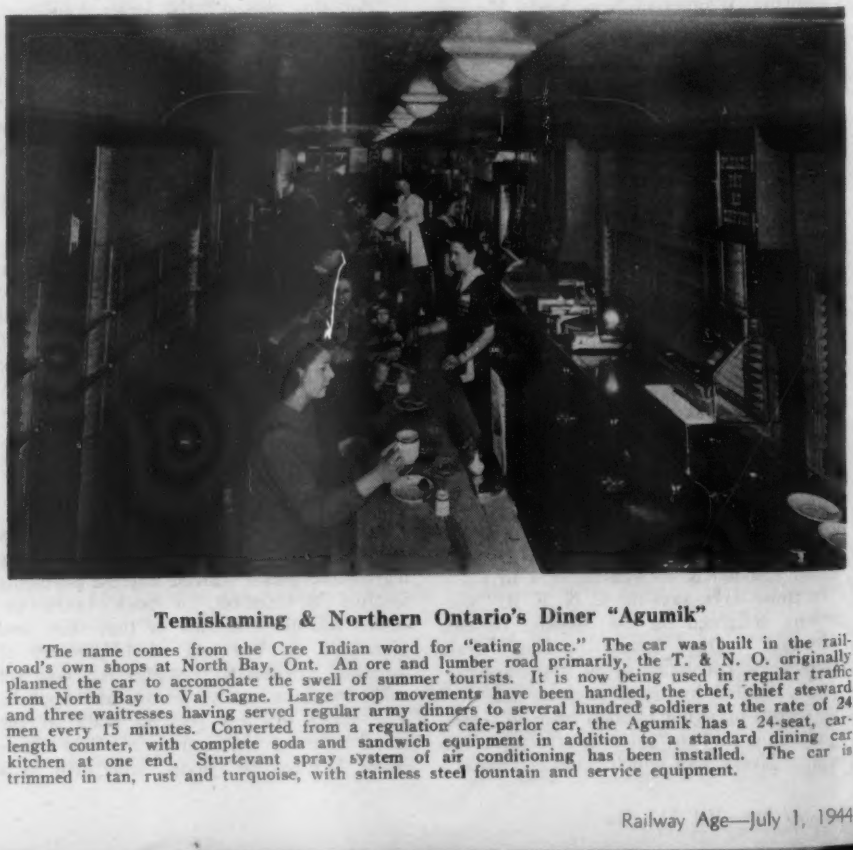

Temiskaming & Northern Ontario's Diner "Agumik"

The name comes from the Cree Indian word for "eating place." The car was built in the railroad's own shops at North Bay, Ont. An ore and lumber road primarily, the T. & N. O. originally planned the car to accomodate the swell of summer tourists. It is now being used in regular traffic from North Bay to Val Gagne. Large troop movements have been handled, the chef, chief steward and three waitresses having served regular army dinners to several hundred soldiers at the rate of 24 men every 15 minutes. Converted from a regulation cafe-parlor car, the Agumik has a 24-seat, car-length counter, with complete soda and sandwich equipment in addition to a standard dining car kitchen at one end. Sturtevant spray system of air conditioning has been installed. The car is trimmed in tan, rust and turquoise, with stainless steel fountain and service equipment.

different regions and commodities, the division pointed out that it is of course understandable how variations between the estimated and the actual shipments occur in a great many cases. Experience shows, it was emphasized, that commodity committees in all boards are giving most careful consideration to the compilation of these estimates.

Some Poor Guesses—Substantial underestimates of national fourth quarter loadings of several commodities were indicated by the tabulation of results. Expressed in percentage of accuracy, the totals were underestimated 26.5 per cent for grain; 66.7 per cent for hay, straw and alfalfa; 12.9 per cent for flour, meal and mill products; 11.6 per cent for citrus fruits; 16.5 per cent for potatoes; 16.0 per cent for lumber and forest products; 12.5 per cent for petroleum and products; and 14.5 per cent for fertilizers.

Substantial overestimates of loadings of three commodities were disclosed—22.8 per cent for cotton seed and products, except oil; 24.7 per cent for gravel, sand and stone; and 13.1 per cent for cement. On the other hand, very small departures from accuracy were reported for a number of commodities, such as overestimates of 2.5 per cent, 0.4 per cent, and 1.5 per cent, respectively, for cotton, livestock, and sugar, including syrup and molasses, and underestimates of 2.0 per cent for poultry and dairy products, the same for paper and paper board, and 3.0 per cent for iron and steel.

Comparisons for the regional boards are shown in the accompanying table.

Comparison, National Forecast With Actual Loadings—Fourth Quarter 1943

Board	Carloadings Fourth Quarter 1943 Estimated	Actual	Per cent of Accuracy Over	Under
Allegheny	1,053,925	1,062,493	..	.8
Atlantic States	611,096	597,377	2.3	..
Central Western	295,675	295,921	..	.08
Great Lakes ..	408,243	419,053	..	2.6
Midwest	913,455	933,481	..	2.2
New England .	97,631	108,863	..	11.5
Northwest ...	620,606	817,722	..	15.8
Ohio Valley ..	928,681	1,012,871	..	9.1
Pacific Coast .	298,603	274,991	7.9	..
Pacific Northwest ..	237,183	267,133	..	12.6
Southeast	774,431	816,685	..	5.5
Southwest	615,115	612,723	.4	..
Trans-Mo-Kansas	332,404	361,653	..	8.8
Total All Boards ..	7,187,048	7,481,966		4.1

Gives Rules for Asking Competitive Bidding Exemption

Instructions governing special applications for exemption from the Interstate Commerce Commission's requirement that, beginning July 1, certain railroad securities must be offered for sale at competitive bidding were made public by the commission this week, with the notation that they were adopted June 1.

As reported in *Railway Age* of May 13, page 910, the commission has determined, as a result of its Ex Parte No. 158 investigation, that, with certain exceptions, sale of railroad securities hereafter generally should be through the process of competitive bidding, and the instructions delineating the requirements to be met by special applications for exemption from this finding pointed out that such special applications should be made only when for any reason it is not practicable to include the request for exemption in the application otherwise required to be filed for the commission's approval of the proposed security issue under the provisions of section 20a of the Interstate Commerce Act.

In addition to the description of the securities and the purposes of the issue, and the general data identifying the applicant which have been required in applications under section 20a, the special application for exemption should include the facts and circumstances relied on to show that competitive bidding should not be required and a statement of the reason why the special application is necessary, the instructions indicated.

No Public Hearing—It was explained that public hearing will not be held in connection with such applications for special exemption unless good cause is shown or the commission considers it desirable. Provision is made, however, for representations by interested parties to be submitted, in writing, within 10 days from the date of notice of filing of such application, which the commission will give in the usual way.

The statement of instructions included a list of those classes of securities for which competitive bidding will not be required, as set forth in the Ex Parte No. 158 report. It was pointed out that applications to sell securities exempted under these general provisions should include a statement of facts relied on to show that the exemption applies.

Railroad Employment of Women Increases

(*Continued from page 49*)

number employed, both over the same 1943 date and during the most recent quarter. In this group the figures reported were 73,769 for this year's mid-April, 70,379 for mid-January, 1944, and 55,832 for mid-April, 1943.

In the fields of employment in which women are not normally represented to any great extent the increases reported during the quarter were very largely in the general laborer classifications, and there was some decline in the number engaged in skilled trades, though this was not evident in every branch of work. For example, there were 113 women machinists reported in mid-April, compared to 129 in mid-January; 4 sheet metal workers, compared to 9; and 3 boilermakers, compared to 5. On the other hand, there were 49 women classed as electrical workers (A) in mid-April but only 36 in mid-January.

Fewer Women Cooks—In transportation service of all categories there was a general tendency to employ more women in mid-April than three months earlier, but there were some noticeable contrasts to this trend. For example, there were 294 women restaurant and dining car chefs and cooks reported in mid-April, in contrast to 421 in mid-January, and 59 road passenger brakemen and flagmen on the more recent date as compared to 90 in this group three months before. Substantial increases, on a percentage basis, were shown in various classes of transportation work, however, such as the report of 51 women switchtenders, in contrast to 30 in mid-January, 184 assistant road passenger conductors and ticket collectors against 140, and 180 train attendants in mid-April compared to 107 in mid-January.

Outside the clerical and professional category, the largest number of women employed in any one class of railroad work in mid-April was 6,388 coach cleaners, in which field the women numbered 46.61 per cent of the total number of employees.

LaGuardia Field Air Shipments Rise 27.8 Per Cent

May air express shipments handled through LaGuardia Field, New York, averaged more than 1800 a day, and the air express division of Railway Express reports the 54,753 shipment total represents a 27.8 per cent increase over the same month a year ago. Gross revenue exceeded $256,000, or 22 per cent more than in May, 1943.

The five-month period, January to May, reflects an increase of 23 per cent over the comparable 1943 period.

Although shipments of war material by air continued throughout May, it was reported there was a growing amount of non-priority air express handled through New York.

British Railways Celebrate Their "Coming of Age"

To commemorate the "coming of age" of the four "main-line railway companies of Great Britain," the "Railway Gazette" (London), has issued a 64-page pamphlet. It is, in the main, a reprint of a recent issue of the "Railway Gazette" which was devoted to a review of the circumstances which led in 1923 to the general merger of British railways into four regional systems and to a survey of the development of the railways under the new regime.

Events leading up to the enactment of the Railway Act, 1921, (which proided for the merger) and the steps taken to put it into operation on January 1, 1923, are chronicled. Succeeding pages are devoted to an outline of railroad operations until the outbreak of the present war. The important acts affecting the operation of the railroads that have been enacted since the inception of the merger plan are also outlined, and will serve as a ready reference to important British railway legislation. The activities of the Royal Commission on Transport and the Salter Conference (dealing with transportation rivalry) are also described.

Subjects covered in the pamphlet include the "standard" revenues, (i.e., the "fair return" to which, supposedly, the railways are entitled), motor transport, air transport, pooling of revenue from competitive traffic, passenger fares, merchandise and mineral rates, railway taxation in England and Wales, ancillary businesses and government control. Benefits of "grouping" (as the British call their railway merger) are discussed, and summarized in part as follows:

"Our general conclusion is that grouping has accomplished its object of assisting railway development in this country. . . . The Groups can claim confidently that since 1923 they have steadily pursued an enlightened policy which normally gives the public satisfactory service at reasonable charges. In the war years, the country has had the inestimable advantage of the

large expenditure incurred by the railways in pre-war years in maintaining their undertakings in a high standard of efficiency. They have never failed to answer the most exacting demands made upon them and have shown that railways remain the backbone of the country's system of ways and communications. At the end of hostilities the Government will be lacking alike in gratitude and foresight if it does not take steps to ensure that our railways are established on a fair financial basis which will enable them to develop and increase their usefulness to the community."

The booklet also contains a list of the Ministers of Transport from 1919 (the date the Ministry of Transport was formed) to date. It concludes with an account of the luncheon held on December 22, 1943, to celebrate the "coming of age" and includes principal addresses delivered on that occasion.

This 8¼-in. by 5½-in. pamphlet, which is entitled "Coming of Age of Railway Grouping," contains a map of each of the four railway systems, and photographs of the chief officers of each system, as well as some others. It is available from the "Railway Gazette," 33, Tothill Street, Westminster, London, S.W.1, England, at 2s.6d. a copy.

British Rys. Active in Plans for Postwar Air Travel

Railways and shipping interests are now planning for consideration by Parliament proposals, without subsidy or preferential treatment to any one group, for postwar air travel on internal routes within Great Britain and to certain points on the Continent.

In 1939, about 80 per cent of total air transport route-mileage in Britain was operated by companies controlled by British railways. Only 5 of 16 such air transport concerns have operated since the war began.

In the main, the railways' chief concern for postwar extension of air transport has to do with routes in Great Britain, to Ireland, Isle of Man, Channel Isles, and to points in Europe extending along a line drawn through Stockholm and Budapest (authorized by Parliament in 1939).

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, P. O. Box 5522, Chicago 80, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. P. Soebbing, 1450 Railway Exchange Bldg., St. Louis, Mo.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St., New York 6, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—Miss Elinor Heffern, Room 839, 310 S. Michigan Ave., Chicago 4, Ill. Annual meeting May 8-10, 1945, Hotel Stevens, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—Miss Elinor Heffern, Room 839, 310 S. Michigan Ave., Chicago 4, Ill. Annual meeting, October 17-19, 1944, Hotel Stevens, Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York 6, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—J. B. Lanctot, Canadian National Rys., E. 811 First National Bank Bldg., St. Paul, Minn. Next meeting, December 14-15, 1944, Palmer House Club Bldg., Chicago, Ill.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 13-15, 1945, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—Page N. Price, Norfolk & Western Magazine, Roanoke, Va.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—W. R. Stough, Jr. (Ass't Secy.-Treas.), Tower Bldg., Washington 5, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York 18, N. Y.

Railroad Division.—E. L. Woodward, Railway Mechanical Engineer, 105 W. Adams St., Chicago 3, Ill.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York 17, N. Y.

AMERICAN WOOD-PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington 5, D. C.

ASSOCIATED TRAFFIC CLUBS OF AMERICA, INC.—R. A. Ellison, Cincinnati Chamber of Commerce, 1203 C. of C. Bldg., Cincinnati 2, O.

ASSOCIATION OF AMERICAN RAILROAD DINING CAR OFFICERS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago 5, Ill.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington 6, D. C.

Operations and Maintenance Department.—Charles H. Buford, Vice-President, Transportation Bldg., Washington 6, D.C.

Operating-Transportation Division. — L. R. Knott, 59 E. Van Buren St., Chicago 5, Ill.

Operating Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Transportation Section.—H. A. Eaton, 59 E. Van Buren St., Chicago 5, Ill.

Fire Protection and Insurance Section.—W. F. Steffens, New York Central, Room 3317, 230 Park Avenue, New York 17, N. Y.

Freight Station Section.—N. Kaplan, 59 E. Van Buren St., Chicago 5, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Protective Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York 7, N. Y.

Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 13-15, 1945, Palmer House, Chicago, Ill.

Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 13-15, 1945, Palmer House, Chicago, Ill.

Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, October 11, 1944, Hotel Sherman, Chicago, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York 7, N. Y. Annual meeting, October 4-5, 1944, Hotel Stevens, Chicago, Ill.

Mechanical Division.—Arthur C. Browning, 59 E. Van Buren St., Chicago 5, Ill.

Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, October 12-13, 1944, Hotel Sherman, Chicago, Ill.

Purchases and Stores Division.—W. J. Farrell (Executive Vice-Chairman), Transportation Bldg., Washington 6, D. C.

Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago 5, Ill.

Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington 6, D. C.

Car Service Division.—E. W. Coughlin (Assistant to Chairman), Transportation Bldg., Washington 6, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington 6, D. C.

Accounting Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C.

Treasury Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C.

Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington 6, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Alton R. R., 340 W. Harrison St., Chicago, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—P. R. Austin, Johns-Manville Sales Corp., Merchandise Mart, Chicago, Ill.

CANADIAN RAILWAY CLUB.—C. R. Crook, 4415 Marcil Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, MO.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel De Soto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—F. H. Stremmel, 6536 Oxford Ave., Chicago 31, Ill. Annual meeting, September 26-28, 1944, Hotel Sherman, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Ralph J. Feddor, 2803 N. Campbell Ave., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—R. E. Mann, 1840-42 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—H. J. Hawthorne, Union Railroad, East Pittsburgh, Pa.

EASTERN CAR FOREMAN'S ASSOCIATION.—W. P. Dizard, 30 Church St., New York 7, N. Y. Regular meetings, second Friday of January, February (Annual Dinner), March, April, May, October and November, 29 W. 39th St., New York, N. Y.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—C. M. Lipscomb, 1721 Parker Street, North Little Rock, Ark. Annual meeting, September 26-28, 1944, Hotel Sherman, Chicago, Ill.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany 3, N. Y. Annual meeting, September 26-28, 1944, Hotel Sherman, Chicago, Ill.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Ben Smart, 7413 New Post Office Bldg., Washington, D. C.

NATIONAL ASSOCIATION OF SHIPPERS' ADVISORY BOARDS.—C. J. Goodyear, 725 Reading Terminal, Philadelphia 5, Pa.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE.—Edward F. Lacey, Suite 450, Munsey Bldg., Washington 4, D. C. Annual meeting, November, 1944, Hotel Pennsylvania, New York, N. Y.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago 4, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Vendome, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York 7, N. Y. Regular meetings, third Thursday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y.

NORTHWEST CARMEN'S ASSOCIATION. — E. N. Myers, Minnesota Transfer Ry., 1434 Iowa Ave., St. Paul, Minn. Regular meetings, first Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul, Minn.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box A, Sausalito, Cal. Regular meetings, second Thursday of each alternate month, at Palace Hotel, San Francisco, Cal., and Hotel Hayward, Los Angeles, Cal.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago 3, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 308 Keenan Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC Price, Allen-Bradley Company, 624 W. Adams St., Chicago 6, Ill.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, Room 811, Utilities Bldg., 327 S. La Salle St., Chicago, Ill. Annual meeting, September 26-28, 1944, Hotel Sherman, Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 308 Keenan Bldg., Pittsburgh, Pa.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with Telegraph and Telephone Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 610 Shell Bldg., St. Louis 3, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—Miss Elinor Heffern, Room 839, 310 S. Michigan Ave., Chicago 4, Ill. Annual meeting, September 19-21, 1944, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with A. A. R. Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga., Savannah, Ga.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto 2, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q. and C. Company, 59 E. Van Buren St., Chicago 5, Ill.

UNITED ASSOCIATIONS OF RAILROAD VETERANS.—Roy E. Collins, 112 Hatfield Place, Port Richmond, Staten Island 2, N. Y.

WESTERN RAILWAY CLUB.—E. E. Thulin, Suite 339, Hotel Sherman, Chicago, Ill. Regular meetings, third Monday of each month, except January, June, July, August and September, Hotel Sherman, Chicago, Ill.

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Equipment and Supplies

Light Equipment Orders During First Six Months

Orders placed for new railroad equipment reported in the *Railway Age* during the first six months, 1944, totaled 23,072 freight cars, 62 steam locomotives and 334 passenger-train cars. Of the 23,072 freight cars, 21,822 were ordered by 24 railroads including 13,502 box, 7,720 hopper, 500 gondola and 100 stock cars; 150 flat cars were ordered by two industrial companies; 100 refrigerator cars by the American Refrigerator Transit Company and 1,000 refrigerator cars by the Pacific Fruit Express. Railroad orders were divided 18,097 to contract car-builders and 3,725 to company shops. Among the larger car orders placed were 1,100 50-ton box, 100 50-ton hopper and ten 70-ton hopper cars by the Central of Georgia; 5,000 50-ton hopper-coal cars by the Chesapeake & Ohio; 2,000 50-ton box cars by the Chicago & North Western; 4,000 55-ton box and 1,000 55-ton hopper cars by the New York Central; 2,000 50-ton box cars by the New York, New Haven & Hartford; 1,000 50-ton box cars by the Southern; and 500 50-ton box and 500 50-ton gondola cars by the Wheeling & ake Erie.

No provision for passenger-train car construction has yet been made by the War Production Board and orders were placed subject to future release by that agency. In addition to the orders for 334 cars by four railroads reported in the accompanying table, other carriers evidenced intention to purchase passenger equipment or entered the market with inquiries during the six-month period. The Atlanta & West Point was reported considering the purchase of two baggage-express cars; the Denver & Rio Grande Western two mail-baggage, two baggage-dormitory, four coach and two dining cars; the New York, Chicago & St. Louis five express-baggage cars; the Seaboard Air Line 15 coach, four passenger-baggage and six dining cars; the Pere Marquette 14 cars for two streamlined trains; and the Illinois Terminal eight cars. Only domestic orders reported last year, which are still pending, were six express and two baggage-mail cars by the Central of Georgia and 50 coaches by the Boston & Maine.

The 66 steam locomotives ordered included 29 by five railroads from the three contract builders and 33 by the Pennsylvania from that railroad's own shops. At the end of June, there were unfilled inquiries in the market for six 4-6-4 type locomotives for the Chesapeake & Ohio; for four 2-8-4 or 2-8-2 type engines for the Tennessee Central; and for five 4-8-4 type engines for the Western Maryland.

Diesel-electric locomotives are built for stock and blanket authorizations covering a number of locomotives granted to builders. Directives respecting deliveries are issued by the War Production Board periodically. During the first five months of 1944, 21 Diesel-electric locomotives of 660 hp. were delivered and, at June 1, there were 54 scheduled ahead and assigned, 44 in 1944 and 10 in 1945. There were 175 Diesels of 1,000 hp. delivered during the period with 241 scheduled for the remaining months of this year, of which 66 are assigned and 175 unassigned, and 71 scheduled ahead for 1945, all assigned. Ten 2,000-hp. Diesel locomotives were delivered with 15 scheduled ahead for 1944, 13 assigned and two unassigned, and 15 scheduled for 1945, 12 assigned and three unassigned. No 4,000-hp. Diesels have been built or are scheduled for building this year, but there are 16 scheduled for 1945, all unassigned. There were 43 5,400-hp. Diesel freight engines delivered, 83 scheduled for the succeeding seven months of this year and 23 for 1945, all of which are assigned.

O. & W. Proposes Complete Dieselization

On June 28, Frederic E. Lyford, trustee of the New York, Ontario & Western, petitioned the federal district court at New York for authority to effect complete Dieselization of the motive power of this road. Trustees of both mortgages, and representatives of bondholders, supported the petition, and it was granted by the court.

The cost of the project is estimated at $6,700,000 and would involve acquisition of 30 to 40 Diesel locomotives of various sizes. Means for financing the project have not been disclosed.

Equipment Orders Reported in the Railway Age January-June, 1944

FREIGHT CARS

Name of Company	No.	Weight	Type	Builder
American Refrigerator Transit	100	40-ton	Refrigerator	Company Shops
Atlanta & West Point	25	40-ton	Box	Pullman-Standard
Bangor & Aroostook	35	50-ton	Hopper	American Car & Foundry
	52	40-ton	Box	Magor Car
Central of Georgia	650	50-ton	Box	Pullman-Standard
	100	50-ton	Hopper	Pullman-Standard
	450	50-ton	Box	American Car & Foundry
	10	70-ton	Hopper	American Car & Foundry
Chesapeake & Ohio	2,500	50-ton	Hopper	American Car & Foundry
	1,250	50-ton	Hopper	General American
	1,250	50-ton	Hopper	Pullman-Standard
Chicago & Eastern Illinois	200	50-ton	Hopper	Mount Vernon
Chicago & North Western	800	50-ton	Box	American Car & Foundry
	600	50-ton	Box	General American
	600	50-ton	Box	Pullman-Standard
Chicago, Rock Island & Pacific	500	50-ton	Box	Pressed Steel Car
Delaware Lackawanna & Western	250	50-ton	Box	Magor Car
	350	50-ton	Box	American Car & Foundry
Erie	600	50-ton	Hopper	Greenville Steel Car
Florida East Coast	50	50-ton	Box	Magor Car
	50	50-ton	Box	Magor Car
Georgia	100	50-ton	Hopper	Pullman-Standard
	75	50-ton	Box	Pullman-Standard
Illinois Terminal	125	50-ton	Hopper	Company Shops
	200	50-ton	Box	American Car & Foundry
Inland Steel	75	100-ton	Flat	General American
Lehigh & New England	300	50-ton	Hopper	Bethlehem Steel
Minneapolis & St. Louis	500	50-ton	Box	General American
Missouri Pacific (for I.-G.N.)	100	40-ton	Stock	Company Shops
Nashville, Chattanooga & St. Louis	200	40-ton	Hopper	Pullman-Standard
New York Central	1,000	55-ton	Box	American Car & Foundry
	1,000	55-ton	Hopper	Pressed Steel Car
	3,000	55-ton	Box	Despatch Shops
New York, Chicago & St. Louis	25	70-ton	Hopper	American Car & Foundry
New York, New Haven & Hartford	2,000	50-ton	Box	Pullman-Standard
Norfolk & Western	500	50-ton	Box	Company Shops
Pacific Fruit Express	500	50-ton	Refrigerator	Mount Vernon Car
	500	50-ton	Refrigerator	General American
Pere Marquette	25	70-ton	Hopper	American Car & Foundry
Southern	1,000	50-ton	Box	Mount Vernon
Western Pacific	350	50-ton	Box	Mount Vernon
Weirton Steel	75	100-ton	Flat	General American
Wheeling & Lake Erie	500	50-ton	Gondola	Bethlehem Steel
	500	50-ton	Box	Ralston Steel Car
Total	23,072			

STEAM LOCOMOTIVES

Name of Company	No.	Type	Builder
Akron, Canton & Youngstown	1	2-8-2	Lima Locomotive Works
Bangor & Aroostook	1	2-8-0	American Locomotive Company
	1	4-8-2	American Locomotive Company
Chesapeake & Ohio	15	2-6-6-6	Lima Locomotive Works
New York Central	1	4-8-4	American Locomotive Company
Richmond, Fredericksburg & Potomac	10	4-8-4	Baldwin Locomotive Works
Pennsylvania	7	2-10-4	Company Shops
	26	4-6-4-4	Company Shops
Total	62		

PASSENGER CARS

Name of Company	No.	Type	Builder
Louisville & Nashville	20	Coach	American Car & Foundry
	4	Tavern-Lounge	American Car & Foundry
	4	Dining	American Car & Foundry
Missouri Pacific	6	Coach	Budd
New York Central	153	Various	Pullman-Standard
	127		Budd
	20		American Car & Foundry
Total	334		

LOCOMOTIVES

The AKRON, CANTON & YOUNGSTOWN has ordered one steam locomotive of 2-8-2 wheel arrangement from the Lima Locomotive Works.

The PENNSYLVANIA has placed an order for 25 steam locomotives of 4-6-4-4 wheel arrangement with the railroad's own shops.

This follows an order for one locomotive of the same type previously ordered in January. The railroad had previously ordered seven steam locomotives of 2-10-4 wheel arrangement from its own shops in March.

Supply Trade

Cooper-Bessemer Inaugurates Program for Training Veterans

A program for training vocationally handicapped veterans for postwar jobs has been placed in operation at Mt. Vernon, Ohio, by the Cooper-Bessemer Corporation in cooperation with the Rehabilitation division of the Veterans Administration. Under the program, discharged soldiers with accredited aptitudes are given a four-year apprenticeship course of 8,232 hr. of shop work and 768 hr. of related classroom instruction under the supervision of instructors and an apprenticeship committee consisting of three labor and three management representatives with the superintendent of schools of Mt. Vernon as an ex officio member. During the course, the veterans will receive standard apprentice pay from Cooper-Bessemer and in addition, a monthly maintenance allowance from the Government which will make the combined income the equivalent of a journeyman machinist's pay. As the veteran's apprenticeship pay rate advances, his allowance from the Government will decrease until he becomes entirely independent as a journeyman machinist.

Those completing the course will be given a "certificate of completion," indicating that they qualify as full-fledged machinists. According to a statement issued by the company, "It is also customary for Cooper-Bessemer to present each man with a $100 bonus and to give him a job at journeyman's wages."

Stockholders of the **Brill Corporation** and the **American Car & Foundry Motors Co.** will vote on a plan of merger and capital readjustment for the two companies at special meetings on July 26. The new company is to be known as the A. C. F.-Brill Motors Company. The Brill Corporation now owns all the preferred and common stock of the J. G. Brill Company and 59.84 per cent of the preferred and 72.15 per cent of the common stock of American Car & Foundry Motors. The latter controls the Hall-Scott Motor Car Company.

Ross Schram has resigned as vice-president in charge of sales and advertising of the **Twin Coach Corporation** after 17 years in that capacity. He will devote his time hereafter to advertising, publicity, and research in the manufacturing and operating sections of the transit field.

As reported in the *Railway Age* of March 4, **H. B. Ellis,** service manager of the **Electro-Motive Division** of the **General Motors Corporation,** has been appointed director of the Parts and Service division; **D. H. Queeney,** sales engineer, has been appointed service manager, and **W. D. Davis,** assistant service manager, has been appointed manager of the Parts division. In addition, **C. L. Olsen,** district service engineer at Miami, Fla., has been

H. B. Ellis

appointed manager of the Eastern region, with headquarters at New York, and **Thorwald O. Robertson,** district service engineer, with headquarters at Los Angeles,

D. H. Queeney

Cal., has been appointed manager of the Western region, with the same headquarters.

W. D. Davis

These latter appointments were reported in the *Railway Age* of June 24.

Mr. Ellis joined the Electro-Motive Division in 1926 as assistant manufacturing superintendent, and two years later he was promoted to assistant service manager. In 1930 he was further promoted to the position he held at the time of his new appointment.

Mr. Queeney was appointed a member of the engineering staff of Electro-Motive in 1929. Prior to that he served as service manager of the Commercial Truck Company and as sales engineer of the International Motors Company.

C. L. Olsen

Mr. Davis was graduated from the General Motors Institute in 1933 and was assigned to the former Winton Engine division of General Motors. He was trans-

T. O. Robertson

ferred to the Electro-Motive division when that organization was separated from the Winton Engine Division.

Roy C. Raasch, formerly of the Chicago office of the **Copperweld Steel Company,** has been placed in charge of the Cleveland, Ohio, office to succeed E. N. Hazlett, who has left the company's service. **A. B. Leach,** who has represented the company in the St. Louis, Mo., area, will succeed Mr. Raasch in the Chicago office.

Clarence J. Hunter has been elected president and general manager, **J. W. Laverack,** vice-president and treasurer, and **J. Dwight Bird,** vice-president in charge of railroad and mid-west power sales, of the **Dampney Company of America.** Mr. Hunter became associated with the Damp-

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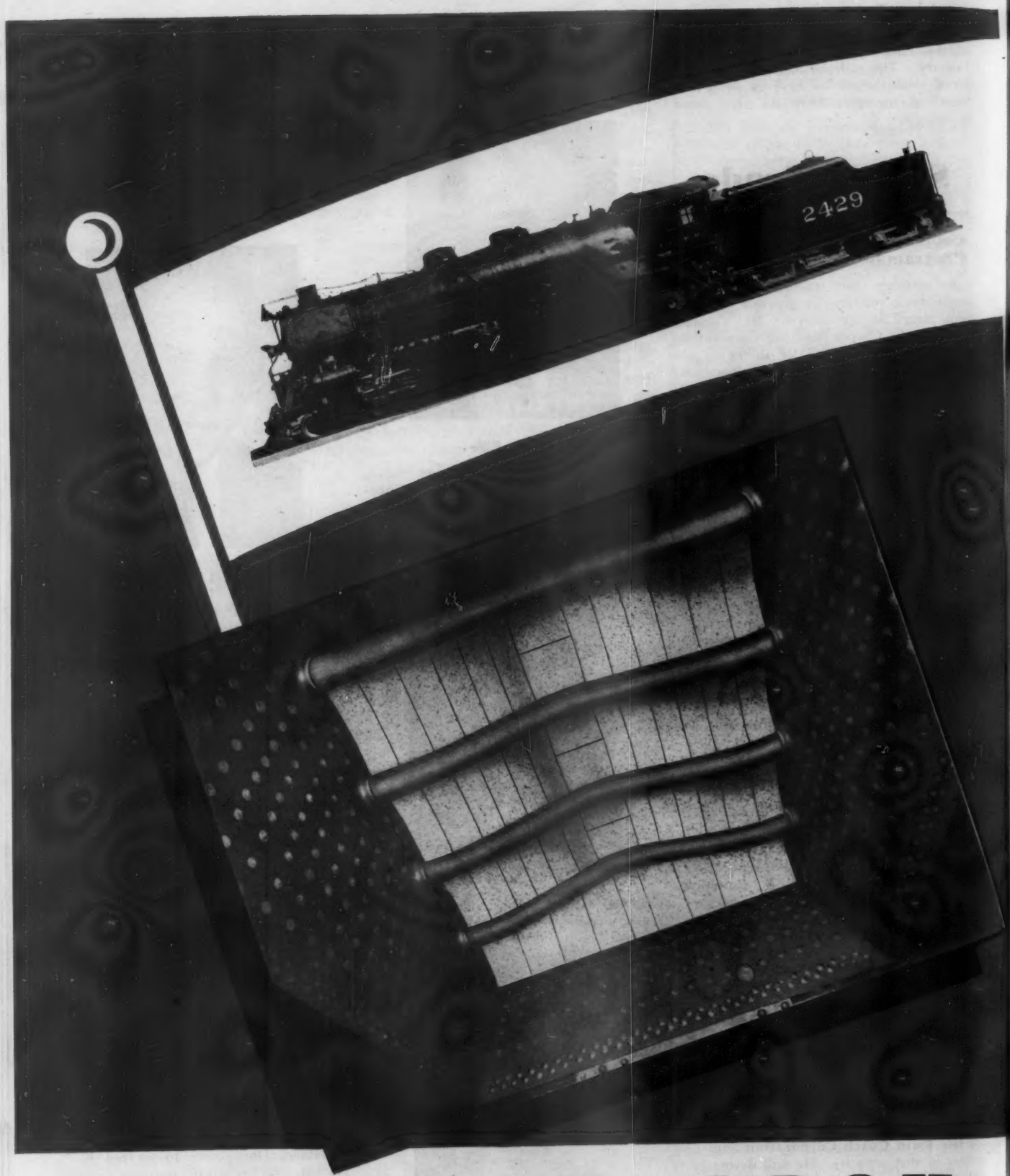

AMERICAN ARCH

60 East 42nd Street, New York 17, N.Y.

First Security Circulators Pass Ten-Year Mark!

The first Security Circulators placed in operation were in Locomotive 2429 of the Illinois Central. The application was made in August, 1934, and up to the present time they have given over 560,000 miles of highly satisfactory service.

In the following ten years 4700 Security Circulators have been applied to locomotives on 34 railroads.

Their widespread acceptance is due to

1. **Positive Flow of Water Over CENTER of Crown Sheet**
2. **Better Arch Brick Support**
3. **Reduced Honeycombing**
4. **Reduced Flue Plugging**
5. **Reduced Cinder Cutting**
6. **Improved Structural Strength of Firebox Due to Strut Effect**

COMPANY, INC.

SECURITY CIRCULATOR DIVISION

ney Company as a manufacturer's agent in 1926 and as a regular employee in 1928. He was appointed general sales manager in 1931 and vice-president in 1932.

John W. Laverack, son of the late president, was associated with the Dampney Company for several years prior to entering the American Field Service in February, 1942. After serving in Egypt and North Africa for a year, he was transferred to the State Department, foreign service auxiliary,

Clarence J. Hunter

with headquarters in Cairo, Egypt. He returned to the United States in the spring of 1944 and resumed his association with the company.

J. Dwight Bird was formerly with the Southern Pacific. He later was employed in the steam turbine division of the General Electric Company and subsequently was in charge of mechanical maintenance of

J. Dwight Bird

various Electric Bond & Share properties in Texas. He became a manufacturer's agent of the Dampney Company in 1926 and a regular employee in 1930, after which he was appointed manager of the Chicago office.

The **Wyandotte Chemicals Corporation,** Wyandotte, Mich., which embarked upon a research program for organic products in 1939, has now formed a Development department to handle the development of both organic and inorganic products. **J. J. Schaefer,** formerly vice-president of Sharples Chemicals, Inc., has been appointed director of development. Mr. Schaefer was graduated from the University of Dayton and Massachusetts Institute of Technology and from 1928 to 1934 was a member of the technical staff of Niacet Chemicals Corporation. In the latter year he was ap-

J. J. Schaefer

pointed director of research of Sharples Chemicals Incorporated and in 1936 was elected vice-president which position he has held until his recent resignation.

J. L. Logan, who has been associated with the **Grip Nut Company** for the past fourteen years, has been appointed southeastern sales manager.

Fred P. Biggs has been named vice-president in charge of sales and **Stephen S. Conway,** assistant vice-president, of the Brake Shoe & Castings and the Southern Wheel divisions of the **American Brake Shoe Company.** Mr. Biggs joined Brake Shoe as sales inspector in 1916 and became a salesman in 1921. He was appointed assistant vice-president of the Brake Shoe Company with headquarters in Chicago in January, 1934, and vice-president of the Brake Shoe & Castings division in April, 1938. His offices will be in New York. Mr. Conway joined the Brake Shoe Com-

Fred P. Biggs

pany in October, 1912 and has been in the sales department since 1929. His headquarters are in Chicago.

W. H. Fehrs, manager of the Cicero, Ill., plant of the **Union Asbestos & Rubber Co.,** has been appointed assistant to the president in charge of railroad sales with headquarters at the company's main offices in Chicago. Mr. Fehrs was employed in the mechanical engineering department of the Union Pacific at Omaha, Neb., for 12 years. He joined the railroad sales department of Union Asbestos in May, 1928, and served as manager of automotive sales from 1932 to 1939. He was appointed assist-

W. H. Fehrs

ant to the vice-president in 1939 and, later that year, manager of the Cicero plant.

Richard T. Coyne, sales engineer of the Enterprise Railway Equipment Company, has resigned to become manager of sales of the **Mt. Vernon Car Manufacturing Company,** Mt. Vernon, Ill., a division of H. K. Porter Company, Inc., Pittsburgh, Pa. Mr. Coyne will assume the duties of

Richard T. Coyne

C. M. Wright who has resigned as vice-president. Mr. Coyne attended Crane Technical High School and Northwestern University and later entered the employ of the Enterprise Railway Equipment Company as sales engineer.

OBITUARY

Col. Warren R. Roberts, co-founder and president of the Roberts & Schaefer Company, Chicago, from 1904 to 1926, died in Miami, Fla., on June 22. Col. Roberts was born in Sadorus, Champaign County, Ill., on October 20, 1863, and was graduated

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8 OUTSTANDING *Features* of the *New* TYPE "E" BOOSTER*

*Trade Mark Reg. U. S. Pat. Off.

To meet the requirements brought about by the trend in locomotive design toward higher boiler pressures and by the new factors in current steam locomotive operation, the Type "E" Booster has many outstanding features.

These include (1) a short cut-off; (2) a special starting feature; (3) cast steel cylinders, with integral inlet and exhaust manifolds; (4) dynamic balancing; (5) a roller bearing crank shaft; (6) a new air control, permitting engagement at higher speed; (7) a new design of ball joint, insuring free flow of steam to and from the Booster; and (8), for each Booster application, the selection of the proper gear ratios for given boiler pressures, wheel diameters and adhesive weight.

Maximum effectiveness and economy in operation is assured by these features.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.
NEW YORK • CHICAGO
In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

from the University of Illinois in 1888. He engaged in general engineering practice from 1888 to 1891 and was engineer of bridges of the city of Chicago from 1893 to 1894. For the next nine years he engaged in general engineering and contracting and in 1904 became president of the Roberts and Schaefer Company. In 1926, he was elected chairman of the board, which position he held until his retirement in 1934. During World War I, Col. Roberts was in charge of Army construction in the Chicago area and in 1929-30 he was engaged by the Russian government to study its mining properties.

Construction

ATLANTIC COAST LINE.—Provided that this road and its subsidiary, the Fort Myers Southern, are authorized by the Interstate Commerce Commission to abandon a line south of Naples, Fla., to Collier City, the construction of about 7 miles of line from Naples north to a connection with the existing line from Fort Myers is planned. The new line would follow the abandoned right of way of the Naples, Seaboard & Gulf, and would afford access to a section of Naples nearer the waterfront than the existing A. C. L. line, which would be abandoned south of the point of intersection with the new line.

ILLINOIS CENTRAL.—Division 4 of the Interstate Commerce Commission has denied this road's application for authority to operate, and for its subsidiary, the Chicago, St. Louis & New Orleans, to construct, a 2.43-mile branch from a point near Daniel Boone, Ky., to the No. 4 mine of the Williams Coal Co., to which the division at the same time authorized the Louisville & Nashville to build a branch from a point near Romney. The division held that the coal company's operations had been local to the L. & N., and that the I. C. line would be unnecessary and wasteful duplication of facilities.

LOUISVILLE & NASHVILLE—Division 4 of the Interstate Commerce Commission has authorized this company to construct a 2.6-mile line from a point near Romney, Ky., westerly into a coal mining area not served by any rail line. The Williams Coal Co. will assume part of the cost of construction, estimated at $77,918, and the extension will terminate at its No. 4 mine, from which coal has been moved by truck. The Illinois Central also had applied to the commission for authority to build a line to serve this shipper, sharing the traffic with the L. & N., but the division, holding that the coal company's operations had been local to the L. & N. nearly 25 years and that I. C. participation in the traffic would result in a substantial reduction in the L. & N.'s existing business, has denied that application.

2,246 VOLUNTEERS—361 of them women—in a recent week performed voluntary duties at freight houses of the London Midland & Scottish, it is reported in Modern Transport, London. Their time worked equaled that of 700 regular 48-hr.-week employees.

Financial

ATLANTIC COAST LINE.—*Acquisition of Subsidiary.*—Division 4 of the Interstate Commerce Commission has authorized this company to acquire the property of the Moore Haven & Clewiston, which it controls through ownership of the outstanding capital stock and bonds. The subsidiary company will be eliminated and the system capital structure simplified.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—*Annual Report.*—The 1943 annual report of this road shows a net income, after interest and other charges, of $1,453,270, as compared with a net income of $704,457 in 1942. Selected items from the income statement follow:

	1943	Increase or Decrease Compared With 1942
Average Mileage Operated	1,622	–7
RAILWAY OPERATING REVENUES	$27,273,328	+$3,543,204
Maintenance of way and structures	3,833,228	+912,132
Maintenance of equipment	4,389,987	+570,120
Transportation	10,517,246	+935,118
TOTAL OPERATING EXPENSES	20,189,533	+2,531,474
Operating ratio	74.0	–.4
NET REVENUE FROM OPERATIONS	7,083,795	+1,011,730
Railway tax accruals	2,398,874	+880,971
Equipment rents—Net	498,082	–211,818
Joint facility rents—Net	288,307	–374,633
NET RAILWAY OPERATING INCOME	3,898,532	+717,210
Total other income	89,603	+21,832
TOTAL INCOME	3,988,135	+739,042
Rent for leased roads	963	–370
Interest on funded debt	2,525,148	–7,993
TOTAL FIXED CHARGES	2,526,838	–11,359
NET INCOME TRANSFERRED TO EARNED SURPLUS	1,453,270	+748,813

CHICAGO & NORTH WESTERN.—*Promissory Notes.*—Division 4 of the Interstate Commerce Commission has authorized this road to issue $1,266,500 of promissory notes in further evidence of the purchase price of equipment being procured under a conditional sale agreement. Authority previously had been given the trustee in this road's reorganization as to a note issue of which this part is being issued by the new company (noted in *Railway Age* of March 25, page 622).

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Reorganization Approved.*—Federal Judge Michael L. Igoe at Chicago last week approved the modified plan of reorganization for the Chicago, Milwaukee, St. Paul & Pacific, calling for the disbursement of $52,000,000 of wartime earnings to bondholders.

NEW YORK, CHICAGO & ST. LOUIS.—*Equipment Trust.*—This company has applied to the Interstate Commerce Commission for authority to assume liability for $2,100,000 of serial equipment trust certificates of 1944, to be marketed through competitive bidding, in connection with the purchase of 15 2-8-4 locomotives from the Lima Locomotive Works at a cost of $2,572,178 and of 25 70-ton covered hopper cars from the American Car & Foundry Co. at a cost of $112,028.

PUEBLO UNION DEPOT—*Joint Use Agreement.*—Division 4 of the Interstate Commerce Commission has approved a joint use agreement under which the Atchison, Topeka & Santa Fe, Colorado & Southern, Denver & Rio Grande Western, and Missouri Pacific will continue to occupy the terminal passenger facilities of the Pueblo (Colo.) Union Depot & Railroad Co., the stock of which is owned by the participating carriers.

SOUTHERN PACIFIC.—*Acquisition by Pacific Electric.*—Division 4 of the Interstate Commerce Commission has authorized the Pacific Electric, controlled by the Southern Pacific Company by ownership of stock, to purchase a 3.09-mile line of the Southern Pacific Railroad Co., operated by the parent company, between Colton, Calif., and San Bernardino. The line involved is parallel to a line of the Pacific Electric, and its acquisition by that road will enable it to have a double-track line between the two points. The line is to be acquired for its ledger value, about $245,895. In view of opposition expressed by representatives of S. P. employees, the division's approval of the transaction, which included authorization to the S. P. to discontinue its operation of the line, was made subject to six conditions for the benefit of employees who may be adversely affected, including protection for a maximum period of four years as to rate of compensation, dismissal pay, occupational benefits, expenses of moving, and disposal of home on account of transfer to another point.

TEXAS PACIFIC-MISSOURI PACIFIC TERMINAL.—*Securities.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue and sell to the First Boston Corp. at 100.879, and has authorized the Missouri Pacific and Texas & Pacific, each the owner of half the terminal company's capital stock, to assume liability for, $6,040,000 of 3⅛ per cent mortgage bonds, series A, due in 1974, the proceeds to be used to retire a like principal amount of first mortgage 5½ per cent gold bonds, series A, due in 1964. Savings in charges to the maturity date of the redeemed issue are estimated at $3,306,583.

TOLEDO, PEORIA & WESTERN.—*Notes.*—An application has been filed with the Interstate Commerce Commission by this company, through George P. McNear, president, for authority to issue $100,000 of 3 per cent notes, series A, due in five years, as part of an issue not to exceed $500,000 outstanding at any time, the proceeds to be used to enlarge the company's working capital during the period of federal operation of the road.

Dividends Declared

Augusta & Savannah.—$2.50, payable July 1 to holders of record June 20.

Camden & Burlington.—75c, semi-annually, payable July 1 to holders of record June 15.

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Delaware.—$1.00, semi-annually, payable July 1 to holders of record June 15.

East Pennsylvania.—$1.50, semi-annually, payable July 18 to holders of record July 1.

Elmira & Williamsport.—7% preferred, $1.60, quarterly, payable July 1 to holders of record June 20.

Mount Carbon & Port Carbon.—$1.25, semi-annually, payable July 13 to holders of record June 30.

Northern Central.—$2.00, semi-annually, payable July 15 to holders of record June 30.

Rochester & Genesee Valley.—$2.00, semi-annually, payable July 1 to holders of record June 20.

Rome & Clinton.—$2.00, payable July 1 to holders of record June 21.

South Western.—$2.50, payable July 1 to holders of record June 20.

West Jersey & Seashore.—$1.50, semi-annually, payable July 1 to holders of record June 15.

Average Prices Stocks and Bonds

	June 27	Last week	Last year
Average price of 20 representative railways stocks..	41.88	41.67	37.71
Average price of 20 representative railway bonds..	89.10	88.70	79.16

Abandonments

CHICAGO, BURLINGTON & QUINCY.—In a proposed report Examiner J. S. Prichard has recommended that the Interstate Commerce Commission authorize this company to abandon part of a branch from Mt. Ayr, Iowa, to Grant City, Mo., 21.8 miles, this being a segment of the more westerly of two Burlington lines between Giles, Iowa, and Albany Junction, Mo. The application was opposed by the state commissions. The examiner remarked that, "although numerous witnesses for the protestants testified at length concerning the inability of the trucks to handle the traffic in question, they do not patronize the segment and would not be directly affected."

GREAT NORTHERN.—This company has applied to the Interstate Commerce Commission for authority to abandon 1.79 miles of line within the city of Duluth, Minn., in connection with a proposal to operate under trackage rights on a line of the Northern Pacific giving it access to the union passenger station.

PENNSYLVANIA.—This company and the Lykens Valley Railroad & Coal Co. have applied to the Interstate Commerce Commission for authority to abandon operation of and to abandon, respectively, 0.88 miles of line at Williamstown, Pa.

SOUTHERN IOWA.—Division 4 of the Interstate Commerce Commission has authorized this road to abandon a line from Centerville, Iowa, to Mystic, 2.63 miles.

TRAINING SIGNALWOMEN.—The London, Midland & Scottish now employs 417 signalwomen, and still more are in training. At Wakefield, "Modern Transport" (London) reveals, there are 20 housewives receiving an intensive three months' theoretical course, at the end of which they will receive manual instruction in the signal tower, finally undergoing an exacting examination. The "classroom" for initial instruction contains a large diagrammatic lay-out of a six-mile section of railway. Cut-out models are used for illustrative purposes.

Railway Officers

EXECUTIVE

William D. Faucette, whose appointment as executive representative reporting to the receivers of the Seaboard Air Line, with headquarters at Norfolk, Va., was announced in the *Railway Age* of June 10, was born in Halifax, N. C. He received a B.E. degree from North Carolina State College in 1901, and was awarded a C.E. degree in 1910, and a D.Sc. degree in 1929. Mr. Faucette entered railroad service in 1901 as assistant engineer in the Savannah, Ga., office of the Seaboard Air Line, and in 1906 was appointed assistant engineer, chief engineer's office, becoming chief clerk to the president in 1910. On January 1, 1913, Mr. Faucette was appointed chief engineer of the Seaboard Air Line System, including all subsidiary lines, the position he was holding

William D. Faucette

when he was recently advanced to executive representative. In his new post, Mr. Faucette will be a member of the Seaboard's executive staff and will handle matters with various governmental authorities, both federal and in the states through which the Seaboard operates. Mr. Faucette will continue to serve on the National Railroad Committee for the Study of Transportation, which has among its objectives planning for postwar transportation. A member of the executive committee of the University of North Carolina, Mr. Faucette has served as vice-president and, later, president of the American Railway Engineering Association.

FINANCIAL, LEGAL AND ACCOUNTING

Lionel Cote, chief solicitor of the Canadian National lines in Quebec, has been appointed counsel in that province, with headquarters as before at Montreal, Que. In his new position Mr. Cote will have charge and supervision of all Canadian National matters of law and claims within the Province of Quebec.

E. W. Sprague, general claim agent of the Illinois Central, Southern Lines, with headquarters at Memphis, Tenn., has retired after 49 years service. Mr. Sprague was born at Buchanan, Mich., on May 29, 1874, and entered railway service on February 10, 1895, as a stenographer of the I. C. at Chicago. On May 1, 1901, he was promoted to chief clerk of the claim department, with the same headquarters, and in May, 1910, he was further promoted to assistant chief claim agent at that point. On September 1, 1911, Mr. Sprague was transferred to Memphis, and in 1925 he was advanced to the position he held at the time of his retirement.

OPERATING

U. J. Mangan, assistant superintendent of sleeping and dining cars of the Central region of the Canadian National, with headquarters at Montreal, Que., has been promoted to superintendent of sleeping and dining cars of the Western region, with headquarters at Edmonton, Alta.

C. W. Dowdy, superintendent, Norfolk division of the Virginian, with headquarters at Victoria, Va., has been appointed superintendent safety at Norfolk, Va. **A. G. Garrett,** assistant superintendent, Norfolk division, has been appointed superintendent at Victoria, succeeding Mr. Dowdy.

W. F. Koehn, assistant division superintendent of the Canadian Pacific, has been appointed superintendent, Laurentian division, with headquarters as before at Montreal, Que., succeeding **F. A. Pouliot,** whose appointment as general manager of the Quebec Central was announced in the *Railway Age* of June 24.

Arthur M. Hand, assistant superintendent of the Bruce division of the Canadian Pacific, has been promoted to superintendent of the Toronto Terminals, with headquarters as before at Toronto, Ont., succeeding **J. R. W. Ambrose,** who has retired.

J. P. Strickland, terminal trainmaster of the Virginian at Sewells Point, Va., has been appointed trainmaster of the Norfolk division with headquarters at Victoria, Va., succeeding **W. C. Wilson,** who has resigned.

Donald Ross, manager, Canadian National Telegraphs at Montreal, Que., has been transferred to Toronto, succeeding **Gilbert H. Walters,** deceased. **Emile D. Prevot,** district inspector, Canadian National Telegraphs, has been appointed manager, with headquarters as before at Montreal, succeeding Mr. Ross.

Hilbert A. Westberg, whose promotion to superintendent of the Northern Iowa division of the Chicago & North Western, with headquarters at Mason City, Iowa, was reported in the *Railway Age* of June 24, was born at Boone, Iowa, on December 14, 1899, and entered railway service on June 11, 1917, as a clerk-stenographer of the North Western at Belle Plaine, Iowa. In October, 1923, he was promoted to chief clerk of the engineering department, with headquarters at Mason City, and two years later he was appointed a switchman at Kenosha, Wis. In 1937 Mr. Westberg was advanced to assistant trainmaster, with headquarters at Clinton, Iowa, and in the same year he was promoted to assistant di-

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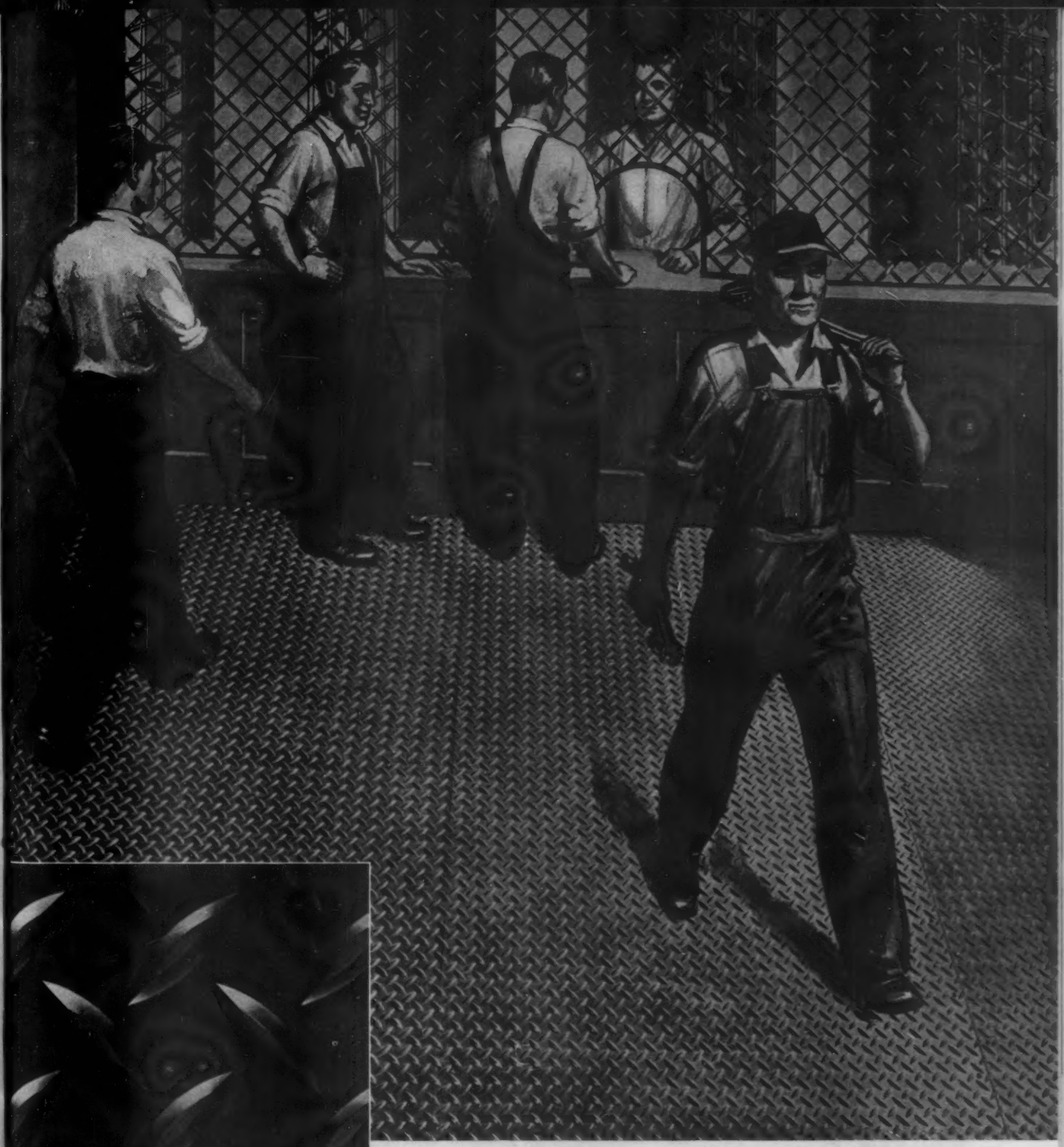

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vision superintendent at Antigo, Wis. In April, 1940, he was transferred to the Galena division, with headquarters at Chicago, the position he held at the time of his new appointment.

V. M. Patterson, assistant to the general manager of the Southern Pacific, with headquarters at San Francisco, Calif., has been promoted to superintendent of the Salt Lake division, with headquarters at Ogden, Utah, succeeding **L. P. Hopkins,** who has been transferred to the Portland division, with headquarters at Portland, Ore. **M. L. Jennings,** division superintendent at Portland, has been transferred to the Sacramento division, with headquarters at Sacramento, Calif., relieving **W. L. Hack,** who has retired after 47 years service.

TRAFFIC

J. R. Bradley, Jr., assistant general passenger agent of the Seaboard Air Line, has been promoted to general passenger agent, with headquarters as before at Jacksonville, Fla.

A. G. Dunn has been appointed general agent and local treasurer of the Canadian National, with headquarters at Portland, Me., succeeding **R. E. Chesney,** deceased.

M. L. McElheny, general manager of the Central of New Jersey at Jersey City, N. J., has been assigned to other duties in the capacity of assistant to chief traffic officer.

Robert Williamson has been appointed Canadian freight agent of the Erie, with headquarters at 69 Yonge street, Toronto, Ontario, succeeding **E. P. Morrill,** deceased.

E. R. Burriss has been appointed general agent, freight traffic department, of the Atlantic Coast Line, with headquarters at Tampa, Fla.

William L. Wright, Jr., district passenger agent of the Pennsylvania at Newark, N. J., has been transferred to Norfolk, Va., and **L. F. Jacobs,** district passenger agent at Atlanta, Ga., has been transferred to Newark, succeeding Mr. Wright.

Edward L. Pardee, passenger traffic manager of the Chicago St. Paul, Minneapolis & Omaha (part of the Chicago & North Western), with headquarters at St. Paul, Minn., has been promoted to passenger traffic manager of the North Western System, with headquarters at Chicago, succeeding **Robert Thomson,** whose retirement is reported elsewhere in these columns.

ENGINEERING & SIGNALING

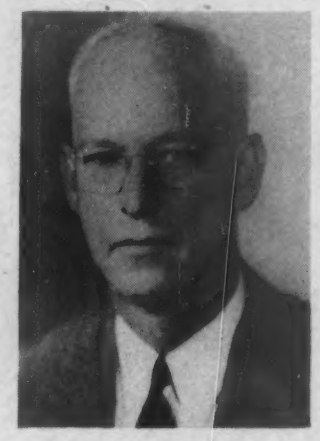
C. O. Ellis, superintendent of telegraph of the Chicago, Rock Island & Pacific, with headquarters at Chicago, has been appointed superintendent of communications, with the same headquarters, a change of title.

R. R. Burchett, division engineer, Chicago division, of the Chesapeake & Ohio, at Peru, Ind., has been transferred to the Huntington division, with headquarters at Huntington, W. Va., succeeding **C. B. Porter,** whose appointment as assistant chief engineer was reported in the *Railway Age* of June 3. **R. C. Watkins,** assistant division engineer, Clifton Forge division, has been appointed division engineer, Chicago division at Peru, succeeding Mr. Burchett.

J. R. Leguenec, supervisor of bridges and buildings of the St. Louis Southwestern, with headquarters at Tyler, Tex., has been promoted to division engineer, with the same headquarters, succeeding **V. C. Nall,** deceased.

Howard C. Forman, division engineer of the Louisville & Nashville, with headquarters at Ravenna, Ky., has been advanced to assistant engineer of the chief engineer's office, with headquarters at Louisville, Ky., succeeding **G. H. Beasley,** whose promotion to principal assistant engineer, with headquarters at Louisville, was reported in the *Railway Age* of June 10.

W. D. Simpson, whose appointment as chief engineer of the Seaboard Air Line, with headquarters at Norfolk, Va., was reported in the *Railway Age* of June 10, was born on February 12, 1890, at Raleigh, N. C., and was graduated with a B.E. degree from North Carolina State College in 1913. Mr. Simpson entered railroad service on February 1, 1916, as draftsman in the office of the chief engineer of the Seaboard Air Line, and in August, 1917, he became bridge draftsman. From October, 1917 to February, 1919, he served as a 1st lieutenant of the U. S. Army Air Corps, returning to the Seaboard as bridge draftsman upon being released from the Army. Mr. Simpson was promoted to chief draftsman in the office of the chief engineer in March, 1919, becoming assistant division engineer, maintenance department, Jacksonville, Fla., in October, 1920, and advancing to division engineer at Tampa, Fla., in February, 1921, and to district engineer maintenance of way in October, 1924. Mr. Simpson served as assistant engineer maintenance of way at Norfolk, from March, 1926 to December, 1940, when he was promoted to assistant chief engineer maintenance of way, the position he was maintaining at the time of his recent promotion to chief engineer.



W. D. Simpson

P. C. Perry, division engineer of the Canadian National, with headquarters at Port Arthur, Ont., has been promoted to district engineer of the Saskatchewan district, with headquarters at Saskatoon, Sask., succeeding **A. M. MacGillivray,** who has retired.

E. Carl Shreve, whose appointment as engineer, maintenance of way, of the Western Maryland, with headquarters at Hillen station, Baltimore, Md., was announced in the *Railway Age* of June 10, was born on December 7, 1903, at Branch, W. Va. Mr. Shreve was graduated in civil engineering from Ohio State University in 1928, receiving an M.S. degree in 1929 and C.E. degree in 1935. He entered railroad service on June 10, 1940 as assistant engineer of the Western Maryland at Baltimore, becoming assistant division engineer at Hagerstown, Md., in August of that year. He was promoted to division engineer, with headquarters at Cumberland, Md., on September 15, 1942, the position he was maintaining at the time of his recent promotion. Prior to entering railroad service Mr. Shreve had been employed in connection with the U. S. Geological Survey, and the West Virginia State Road Commission. He also served for a time as head of the engineering department, Potomac State School of West Virginia University.

E. Carl Shreve

Robert M. Stimmel, whose promotion to superintendent of water service of the New York, Chicago & St. Louis (Nickel Plate), with headquarters at Lima, Ohio, was reported in the *Railway Age* of June 24, was born at Garnett, Kan., on September 30, 1896, and graduated from the University of Kansas in 1920. He entered railway service on October 15, 1924, as an assistant chemist of the Chesapeake & Ohio, and two years later he went with the Rocking Valley (now part of the C. & O.). In January, 1930, he was promoted to chief chemist, water supply department, of the Chesapeake & Ohio, with headquarters at Huntington, W. Va. In August, 1933, Mr. Stimmel became chief chemist, water department, of the Nickel Plate, with headquarters at Lima, holding that position until his new appointment.

James L. Kirby, chief engineer maintenance of way of the Seaboard Air Line at Norfolk, Va., whose retirement was announced in the *Railway Age* of June 10 is a native of Richmond, Va., born on August 28, 1883. Mr. Kirby attended Ann Smith Acad-

News Department continued on next left-hand page

He won't dodge this-

Don't *you* dodge this!

The kid'll be right there when his C. O. finally gives the signal . . .

There'll be no time to think of better things to do with his life. THE KID'S IN IT FOR KEEPS—giving all he's got, *now!*

We've got to do the same. This is the time for us to throw in everything *we've* got.

This is the time to dig out that *extra* hundred bucks and spend it for Invasion Bonds.

Or make it $200. Or $1000. Or $1,000,000 if you can. There's no ceiling on this one!

The 5th War Loan is the biggest, the most vitally important financial effort of this whole War!

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emy and Roanoke College. In 1902 he entered railroad service with the Norfolk & Western, serving with preliminary location and construction party until 1904, when he went with the Virginian to serve with a preliminary survey party for four months. In September of the same year he joined the employ of the Seaboard Air Line as assistant engineer, remaining in this position until January, 1907, when he became engaged in dam construction. In June of that year he returned to his position as assistant engineer of the Seaboard, becoming division engineer in July, 1912, and engineer maintenance of way in July, 1918. Mr. Kirby had been serving as chief engineer, maintenance of way since March, 1931.

MECHANICAL

J. M. Bailey, supervisor of Diesels of the Seaboard Air Line, has been appointed general supervisor of Diesels, with headquarters as before at Savannah, Ga.

C. L. Hartshorn has been appointed assistant to general mechanical superintendent of the New York, New Haven & Hartford, with headquarters at New Haven, Conn.

C. J. Tallevast has been appointed general mechanical inspector of the Seaboard Air Line, with headquarters at Savannah, Ga.

J. H. Payne, road foreman of engines of the Canadian National at Nakina, Ontario, has been appointed master mechanic, Hornepayne division at Hornepayne, Ont., succeeding **A. MacDonald,** who has been transferred to the Capreol division at Capreol, Ont., succeeding **Q. Boyd.** Mr. Boyd has been transferred to the Allandale division, with headquarters at Allandale, Ont., succeeding **J. Hawkins,** deceased.

M. R. Brockman, master mechanic at the Southern's Spencer shop, Spencer, N. C., has been appointed to the newly created position of chief mechanical engineer, with headquarters at Washington, D. C. **I. R. Miller,** motive power engineer at Washington, has been appointed mechanical engineer, succeeding **J. M. Plaskitt,** who left the Southern to become regional manager of the Edward G. Budd Manufacturing Company at Washington. **H. C. Swanson,** assistant master mechanic has been promoted to master mechanic with headquarters as before at Spencer, succeeding Mr. Brockman and **J. P. Cargill** master mechanic at Columbia, S. C., has been appointed assistant master mechanic at Spencer succeeding Mr. Swanson. **O. H. Smart,** general roundhouse foreman at Spencer has been advanced to master mechanic to succeed Mr. Cargill at Columbia.

Charles Rountree Sugg, electrical engineer of the Atlantic Coast Line for more than 35 years, has retired from active service. Mr. Sugg was born on September 23, 1876, in Greenville, N. C. During his early youth he served in the House of Representatives, North Carolina State Legislature and North Carolina State Senate as page and assistant chief page, respectively. He entered the employ of the Government Printing Office, Washington, D. C., in October, 1893, as messenger, holding various positions until 1908, then serving until January 31, 1909 as superintendent of buildings. During his employ with the government, Mr. Sugg attended and in 1899 was graduated from Bliss Electrical School, and in 1905 he was graduated in electrical engineering from George Washington University. He entered railway service on February 1, 1909, as electrical engineer of the Atlantic Coast Line, the position he held until his recent retirement. Mr. Sugg is a past president of the Association of Railway Electrical Engineers.

Robert Hunt, assistant general superintendent of motive power of the Seaboard Air Line at Savannah, Ga., has been promoted to general superintendent of motive power, with headquarters at Norfolk, Va., succeeding the late Eugene H. Roy, whose death on June 17 was reported in the *Railway Age* of June 24. **S. D. Dekle,** assistant to the general superintendent of motive power at Jacksonville, Fla., has been promoted to assistant general superintendent of motive power, with headquarters at Norfolk. Mr. Hunt, a native of Manchester, England, was born on February 16, 1888. He attended Manchester Technical College, receiving a degree in mechanical engineering. Mr. Hunt entered railroad service in 1901 with the Great Central (now London, Midland & Scottish), England, serving until 1909 as apprentice and draftsman. Mr. Hunt entered American railway service in 1909 as a draftsman of the Atlantic Coast Line at Wilmington, N. C., becoming chief draftsman in 1913. In 1918 he went with the Seaboard Air Line as mechanical engineer at Norfolk, and in 1930 was promoted to assistant general superintendent motive power, the position he was holding at the time of his new appointment.

Robert Hunt

SPECIAL

J. M. Cooper, labor inspector of the Southern Pacific, with headquarters at Sacramento, Cal., has been promoted to safety supervisor, with the same headquarters.

PURCHASES AND STORES

C. S. Bishop, storekeeper of the Southern at Jacksonville, Fla., has been promoted to division storekeeper, with headquarters at Ludlow, Ky. **R. A. Livengood,** division storekeeper, with headquarters at Columbia, N. C., has been transferred to Somerset, Ky., replacing **J. H. Logan,** who has been transferred to Meridian, Miss.

D. E. Dawson, tie and timber agent of the Gulf, Mobile & Ohio, with headquarters at Mobile, Ala., has been appointed acting general storekeeper, with the same headquarters, succeeding **G. H. Therrell,** who has been granted a leave of absence on account of illness.

OBITUARY

William J. Hogan, general manager of the Grand Trunk Western, with headquarters at Detroit, Mich., died in a hospital at that city on June 26. Mr. Hogan was born at Portland, Me., and entered railway service in September, 1898, as a telegraph operator on the Grand Trunk (now part of the Canadian National) at Island Pond, Vt. After serving in various stations he was transferred to Montreal, Que. Mr. Hogan then served as dispatcher and chief dispatcher at Durand, Mich., and St. Thomas, Ont., later being advanced to trainmaster. In the spring of 1927, Mr. Hogan was promoted to superintendent of the Pontiac (Mich.) terminals and in October, 1930, he was advanced to superintendent of the Chicago division, with headquarters at Battle Creek, Mich. On June 1, 1936, his jurisdiction was extended to include the Detroit division and on August 1, 1939, he was promoted to general superintendent, with headquarters at Detroit, Mich. In June, 1942, he was advanced to the position he held at the time of his death.

Henry W. Fenno, who retired in 1940 as engineer maintenance of way of the New York Central, Lines West of Buffalo, with headquarters at Cleveland, Ohio, died at that city on June 27. Mr. Fenno was born at Dorchester, Mass., on December 16, 1870, and was educated at Lowell Institute at Boston, Mass. He entered railway service in November, 1891, in the engineering department of the New York and New England (now a part of the New York, New Haven & Hartford). From January, 1893, to October, 1904, he was in the service of the Boston & Albany. In October, 1904, Mr. Fenno was appointed chief draftsman and office engineer on the Lake Shore & Michigan Southern (now a part of the New York Central) and in 1906 he was promoted to resident engineer of the Eastern division, with headquarters at Dunkirk, N. Y. In February, 1913, he was transferred to the Western division, with headquarters at Chicago, and in March, 1916, the Illinois division was added to his territory. He was promoted to division engineer in 1917. On November 1, 1927, he was advanced to the position he held at the time of his retirement.

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200 PROSECUTIONS of railway patrons for boarding or leaving moving trains resulting in numerous and substantial fines, were reported in the Capetown suburban area in a two-weeks' period early this year, a recently received bulletin of the South African Railways and Harbours reveals. Resorting to legal action "with reluctance," railway officers, it is noted, "were compelled to act by the obviously growing disregard for railway regulations, which were primarily designed for the protection of the traveling public."

Table of Operating Revenues and Expenses appears on third right-hand page

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Protect MOTIVE POWER

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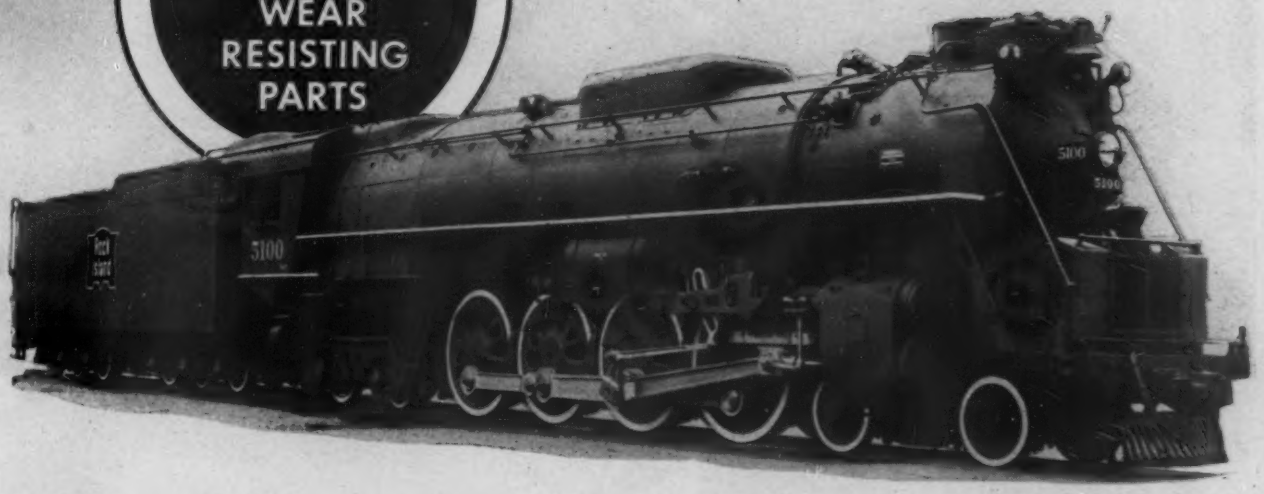

ARE we using every available means to protect our own motive power — to conserve our own badly-needed man power? Do we make certain that every wearing part of each locomotive is capable of maximum service — Are we employing the kind of material that guarantees such service?

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Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings, All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

HUNT-SPILLER MFG. CORPORATION
V. W. Ellet, *President* **E. J. Fuller, *Vice-Pres. & Gen. Mgr.***

Office & Works
383 Dorchester Ave. **South Boston 27, Mass.**

Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER
Air Furnace GUN IRON

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Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 132 monthly reports of revenues and expenses representing 135 Class I steam railways

SWITCHING AND TERMINAL COMPANIES NOT INCLUDED

FOR THE MONTH OF APRIL, 1944 AND 1943

Item	United States		Eastern District		Southern District		Western District	
	1944	1943	1944	1943	1944	1943	1944	1943
Miles of road operated at close of month	228,701	229,096	56,116	56,327	43,384	43,435	120,201	129,334
Revenues:								
Freight	$561,092,693	$570,080,292	$220,664,125	$229,634,205	$109,805,745	$111,275,054	$230,622,823	$229,171,033
Passenger	146,583,031	127,914,203	57,126,037	50,220,298	29,876,471	27,316,829	59,580,523	50,377,076
Mail	10,431,767	10,212,890	3,454,785	3,651,882	2,075,285	1,807,260	4,901,697	4,753,748
Express	11,538,771	12,219,700	3,921,295	4,391,119	1,873,549	2,052,151	5,743,927	5,776,430
All other operating revenues	29,887,883	28,311,840	12,638,462	12,451,217	4,209,660	4,041,491	13,039,761	11,819,132
Railway operating revenues	759,534,145	748,738,925	297,804,704	300,348,721	147,840,710	146,492,785	313,888,731	301,897,419
Expenses:								
Maintenance of way and structures	102,111,481	83,486,728	38,908,600	31,371,582	17,007,831	14,984,184	46,195,050	37,130,962
Depreciation	8,821,732	8,801,441	3,807,157	3,800,297	1,459,007	1,463,734	3,555,568	3,537,410
Retirements	1,005,765	410,024	370,402	100,356	71,060	47,381	564,303	262,287
Deferred maintenance	* 782,983	* 113,939	* 174,313	* 65,405	.....	.....	* 608,670	* 48,534
Amortization of defense projects	1,444,169	732,040	484,007	233,271	246,110	143,032	714,052	355,737
Equalization	860,403	880,250	* 288,431	* 84,071	168,009	475,912	980,825	488,409
All other	90,762,395	72,776,912	34,709,778	27,387,134	15,063,645	12,854,125	40,988,972	32,535,653
Maintenance of equipment	129,704,353	113,606,506	54,249,240	49,137,277	24,313,688	21,929,726	51,141,425	43,176,503
Depreciation	17,781,237	17,655,882	7,533,243	7,463,544	3,535,863	3,637,810	6,712,131	6,554,528
Extraordinary retirements	.....	.....	.....	.....	.....	.....	.....	.....
Deferred maintenance and major repairs	* 260,194	100,035	2,560	.....	.....	* 5,013	* 262,754	105,048
Amortization of defense projects	13,726,880	9,586,597	4,511,903	3,582,433	3,643,220	2,294,965	5,571,757	3,709,199
Equalization	153,903	128,972	18,487	25,784	81,925	97,708	53,491	5,480
All other	98,302,527	86,135,020	42,183,047	38,065,516	17,052,680	15,267,256	39,066,800	32,802,248
Traffic	11,035,295	10,245,132	4,041,036	3,713,120	1,894,469	1,966,802	5,099,790	4,565,210
Transportation—Rail line	239,872,296	211,863,960	106,836,652	96,801,833	41,050,381	36,197,538	91,985,263	78,864,589
Transportation—Water line	308	383	.....	.....	.....	.....	308	383
Miscellaneous operations	9,843,133	8,239,120	3,388,678	2,956,830	1,658,705	1,414,002	4,795,750	3,868,588
General	16,436,937	14,675,823	6,492,324	5,988,929	3,211,891	2,875,498	6,732,722	5,811,396
Railway operating expenses	509,003,803	442,117,952	213,916,530	189,969,571	89,136,965	78,730,750	205,950,308	173,417,631
Net revenue from railway operations	250,530,342	306,620,973	83,888,174	110,379,150	58,703,745	67,762,035	107,938,423	128,479,788
Railway tax accruals	146,019,115	161,661,944	45,077,006	53,789,592	36,948,337	41,630,061	63,993,772	66,242,291
Pay-roll taxes	19,258,143	16,235,233	7,935,889	6,925,512	3,327,965	2,864,272	7,994,289	6,445,449
Federal income taxes†	101,427,221	120,882,397	26,324,855	36,150,862	28,367,121	33,956,486	46,735,245	50,775,049
All other taxes	25,333,751	24,544,314	10,816,262	10,713,218	5,253,251	4,809,303	9,264,238	9,021,793
Railway operating income	104,511,227	144,959,029	38,811,168	56,589,558	21,755,408	26,131,974	43,944,651	62,237,497
Equipment rents—Dr. balance	13,264,531	12,947,456	6,263,766	5,721,110	1,235,441	1,087,753	5,765,324	6,138,593
Joint facility rent—Dr. balance	3,572,345	3,342,066	1,754,067	1,676,429	394,111	376,658	1,424,167	1,288,979
Net railway operating income	87,674,351	128,669,507	30,793,335	49,192,019	20,125,856	24,667,563	36,755,160	54,809,925
Ratio of expenses to revenues (per cent)	67.0	59.0	71.8	63.2	60.3	53.7	65.6	57.4

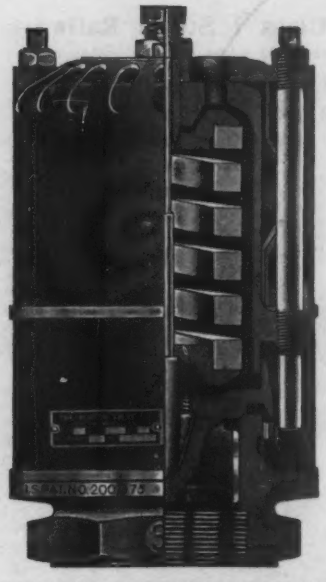
FOR FOUR MONTHS ENDED WITH APRIL, 1944 AND 1943

Item								
Miles of road operated at close of month	228,758	229,240	56,114	56,366	43,387	43,466	129,257	129,408
Revenues:								
Freight	$2,257,906,624	$2,182,729,337	$883,866,860	$864,750,641	$444,339,239	$439,235,640	$929,700,525	$878,743,056
Passenger	570,337,945	468,307,760	223,617,412	185,422,763	116,713,788	101,179,763	230,006,745	181,705,234
Mail	41,179,575	39,044,992	13,714,271	13,740,979	7,859,835	6,998,061	19,605,469	18,305,952
Express	48,614,857	41,727,579	16,560,078	15,409,073	8,139,160	7,187,202	23,915,619	19,131,304
All other operating revenues	114,501,555	107,927,029	49,055,778	47,256,889	16,496,897	15,068,488	48,948,880	45,601,652
Railway operating revenues	3,032,540,556	2,839,736,697	1,186,814,399	1,126,580,345	593,548,919	569,669,154	1,252,177,238	1,143,487,198
Expenses:								
Maintenance of way and structures	384,145,678	308,966,088	146,530,397	120,143,578	68,202,247	57,285,719	169,413,034	131,536,791
Depreciation	35,262,287	35,293,495	15,233,578	15,185,301	5,826,256	5,885,900	14,202,453	14,222,294
Retirements	3,485,786	649,596	1,103,917	250,037	306,876	106,138	2,074,993	293,421
Deferred maintenance	* 1,886,143	* 202,229	* 321,921	* 99,497	.....	.....	* 1,564,222	* 102,732
Amortization of defense projects	5,542,487	2,624,669	1,855,909	811,142	967,881	483,615	2,718,697	1,329,912
Equalization	16,232,414	15,857,283	8,522,668	7,165,313	2,482,257	4,193,021	5,227,489	4,498,949
All other	325,508,847	254,743,274	120,136,246	96,831,282	58,618,977	46,617,045	146,753,624	111,294,947
Maintenance of equipment	519,142,070	441,566,349	218,453,033	191,802,531	96,436,098	83,006,955	204,252,939	166,756,863
Depreciation	70,569,513	70,324,715	29,833,574	29,501,559	14,193,726	14,347,942	26,542,213	26,475,214
Extraordinary retirements	.....	.....	.....	.....	.....	.....	.....	.....
Deferred maintenance and major repairs	* 443,552	382,150	11,544	.....	.....	* 19,251	* 455,096	401,401
Amortization of defense projects	52,798,764	38,040,953	17,447,077	14,585,555	13,811,087	9,574,495	21,540,600	13,880,903
Equalization	425,443	506,265	46,937	111,623	267,130	287,680	111,376	100,962
All other	395,791,902	332,312,266	171,113,901	147,597,794	68,164,155	58,816,089	156,513,846	125,898,385
Traffic	43,676,394	40,536,134	15,833,234	14,763,497	7,814,652	7,817,629	20,028,508	17,955,008
Transportation—Rail line	980,170,279	842,635,319	441,550,666	384,843,414	165,580,095	144,361,791	373,039,518	313,430,114
Transportation—Water line	1,179	4,292	.....	.....	.....	.....	1,179	4,292
Miscellaneous operations	39,078,037	32,528,838	13,729,542	11,786,657	6,577,301	5,451,630	18,771,194	15,290,551
General	66,330,426	57,902,920	26,812,248	23,864,794	12,635,532	11,220,675	26,882,646	22,817,451
Railway operating expenses	2,032,544,063	1,724,139,940	862,909,120	747,204,471	357,245,925	309,144,399	812,389,018	667,791,070
Net revenue from railway operations	999,996,493	1,115,596,757	323,905,279	379,375,874	236,302,994	260,524,755	439,788,220	475,696,128
Railway tax accruals	586,054,875	579,786,350	171,198,074	187,922,743	148,299,447	154,052,389	266,557,354	237,811,218
Pay-roll taxes	76,022,266	63,684,796	32,186,089	27,403,895	13,404,542	11,237,502	30,431,635	25,043,399
Federal income taxes†	411,209,544	420,986,139	98,284,638	119,983,932	114,412,243	123,129,996	198,512,663	177,872,211
All other taxes	98,823,065	95,115,415	40,727,347	40,534,916	20,482,662	19,684,891	37,613,056	34,895,608
Railway operating income	413,941,618	535,810,407	152,707,205	191,453,131	88,003,547	106,472,366	173,230,866	237,884,910
Equipment rents—Dr. balance	50,024,854	48,595,249	23,534,277	20,085,366	3,390,560	4,038,297	23,100,017	24,471,586
Joint facility rent—Dr. balance	13,632,258	13,480,146	6,703,664	6,841,788	1,523,357	1,597,200	5,405,237	5,041,158
Net railway operating income	350,284,506	473,735,012	122,469,264	164,525,977	83,089,630	100,836,869	144,725,612	208,372,166
Ratio of expenses to revenues (per cent)	67.0	60.7	72.7	66.3	60.2	54.3	64.9	58.4

* Decrease, deficit, or other reverse items.

† Includes income tax, surtax, and excess-profits tax.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

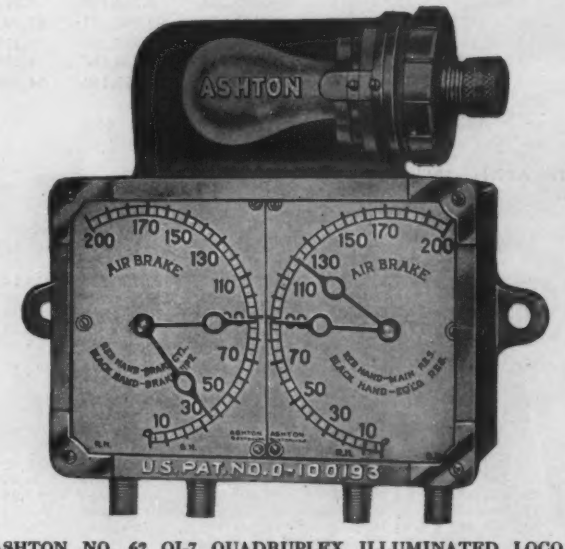


ASHTON FC-10 MUFFLED SAFETY VALVE

The FC-10 Muffled Locomotive Safety Valve was developed to meet the condition of increased evaporating efficiency on high pressure locomotive boilers. It has operated successfully for a period of over ten years in road tests and regular service on locomotives carrying pressures up to 300 pounds per square inch. Throughout this period it has operated without the necessity of the renewal of any parts.

ASHTON NO. 52 DI-3 6¾" DOUBLE DIAL LOCOMOTIVE STEAM GAGE, LAMP HOUSING CAST INTEGRAL WITH CASE

The New Style No. 52 DI-3 Locomotive Steam Gage eliminates the need of separate boiler pressure gages for engineer and fireman. Each face of the Gage has a dial and hand illuminated by a standard electric lamp bulb and can be seen from either right or left side of the locomotive cab. Dial has a permanent white porcelain surface which is positively non-glare and can readily be cleaned.



ASHTON NO. 62 QI-7 QUADRUPLEX ILLUMINATED LOCOMOTIVE AIR BRAKE GAGE. LAMP HOUSING CAST INTEGRAL WITH FACE RING.

The principal object of this new design is to place in a centralized position the two air gages and the indicating hands of same as near together as possible, so that the engineer by concentrating his vision particularly on the brake pipe and equalizing reservoir hands may regulate more uniformly and accurately his brake applications and secure smooth handling of the train.

ASHTON NO. QI-9 QUADRUPLEX ILLUMINATED LOCOMOTIVE STOKER GAGE

The Ashton Locomotive Stoker Gage is a combination of two duplex gages, ordinarily used in stoker service, mounted in heavy rectangular dust-proof case.

Combining the two gages in one case reduces the space required for this equipment in locomotive cabs. Especially adapted to service on the HT and HT-I stokers or other types where three or four pressure indications are required.

THE ASHTON VALVE COMPANY

161-179 FIRST STREET, CAMBRIDGE, MASS.

CHICAGO, ILL. NEW YORK, N. Y. SAN FRANCISCO, CAL.

SELLERS TYPE "S" INJECTOR

Make a comparison of design and operating principles and you'll convince yourself that the Sellers Type "S" is years ahead of old style conventional injectors.

Chief among its advantages are safety and convenience for the engineer . . . Instead of groping around for two or three valves he controls all functions of the injector with a single lever—simple as an automobile hand-brake. There is nothing to take his hand off the throttle or his eyes off the road.

Make a note of these exclusive features:

- Lowest cost for injector renewals and labor
- Minimum loss of water when starting and stopping
- No water hammer or bulging steam lines
- Located far above rails, free from roadbed hazards
- Permits complete drainage of tank when necessary

Glad to send you complete technical information.

WILLIAM SELLERS & COMPANY
1631 Hamilton Street, Philadelphia, U. S. A.

PRECISIONEERING SINCE 1848 SELLERS

GLOBE STEEL TUBES

"Go to College"

"The halls of learning" like Yale and Chicago Universities have at their command engineers and laboratories qualified to make all the critical tests on material bought for their own use. Globe Seamless Steel Tubes have gone into the boilers of their powerhouses to insure long and continuous operation at low maintenance costs.

Globe Seamless Steel Tubes of carbon, alloy, or stainless steel are made in a plant devoted for more than 30 years exclusively to the manufacture of steel tubing. Every order, large or small, is a special order and is checked at each stage of our exacting process of manufacture. The finished tubes are inspected with the most up-to-date testing devices to insure accurate filling of customer's specifications.

Globe Steel's customers have at their service our large technical staff and completely equipped laboratory. We will be glad to aid you in selecting steel tubing to meet your particular requirements.

★ STAINLESS TUBES
★ BOILER TUBES
★ GLOBEIRON TUBING
★ GLOWELD TUBES

GLOBE TUBES

★ CONDENSER AND HEAT EXCHANGER TUBES
★ MECHANICAL TUBING

GLOBE STEEL *Tubes*

5012

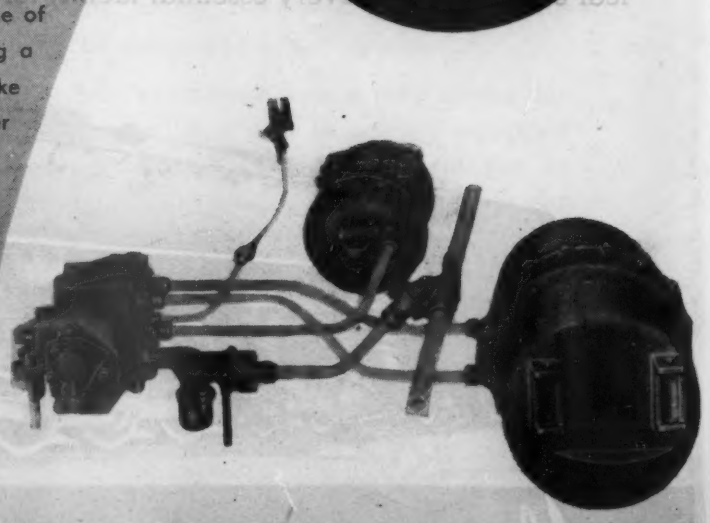
GLOBE STEEL TUBES CO., *Milwaukee 4, Wis., U. S. A.*

Better Brakes
HELPED SET THIS RECORD

727 BILLION Revenue Ton—Miles of Freight in 1943

IN 1943 the railroads handled 727 billion revenue ton-miles of freight, or more than 72% of the entire nation's inter-city tonnage and by far the greatest in history . . . Freight today moves at much higher speeds, and it is the improved retardation control, made possible by the "AB" Brake, which has played a very important part in the large increase of ton-miles per car per locomotive . . . By providing a more rapid, more positive and more effective brake operation the "AB" Brake has made possible higher speeds, heavier tonnage trains, more reliable performance and more efficient transportation with a minimum amount of freight cars. And the greater the number of "AB" Brakes in service, the greater the flexibility of control and resulting operating economies. Post war plans should without question include general application on all freight cars to insure greater progress in transportation.

NJ "AB" BRAKE



The New York Air Brake Company

420 Lexington Ave., New York City. Plant: Watertown, New York

AN EASY WAY TO IMPROVE LOCOMOTIVE LIGHTING

The greater reliability and more uniform electrical performance of the Type K-240 headlighting turbo-generator are features of great importance in meeting the demands of present-day operating conditions. The Type K-240 runs longer between inspections, requires less maintenance, and uses less oil. It furnishes dependable power for all the requirements of modern locomotive lighting, and stands up to continuous duty with the minimum of attention. Existing Type K-2 equipments can be readily converted to the modern Type K-240 by application of improved interchangeable parts.

Pyle-National turbo-generators are available in a full range of types, capacities 500 watts to 12,000 watts, for all classes of service. Pyle-National headlight cases, cab lighting fixtures, and wiring equipment allow you to choose from a complete line, adapted to the needs of any type of modern motive power.

THE PYLE-NATIONAL COMPANY
1334-58 North Kostner Avenue • Chicago, Illinois

Offices: New York, Baltimore, Pittsburgh, St. Louis, St. Paul, San Francisco

Export Department: International Railway Supply Co., New York
Canadian Agents: The Holden Co., Ltd., Montreal

Type C-14605
Streamline Case

Type MO-6
Turbo-generator

Type C-155
Cast Headlight Case

PYLE-NATIONAL
RAILWAY
ELECTRICAL EQUIPMENT
• SINCE 1897 •

Type 14065
Switch Engine Case

HEADLIGHTS • TURBO-GENERATORS • CONDUIT FITTINGS • FLOODLIGHTS • MULTI-VENT

Stay at Your Battle Stations!

MANAGEMENT • LABOR

—the 5th War Loan Drive is still on.

July 29th is the last pay day in the Drive.

The U. S. Treasury has set the overall goal at $16,000,000,000 —$6,000,000,000 from individuals alone. This is the biggest sum ever asked of the American people—*and it must be raised!*

Keep fighting. The 5th War Loan is a crucial home front battle of tremendous importance to the total war effort.

Tighten up your 5th War Loan Drive organization. Step up your solicitation tempo. Drive! Drive!! Drive!!! Hit your Plant Quota's 100% mark with a bang that'll proclaim to all the world that the U. S. Home Front is solidly in back of the Fighting Front.

Need help? Need ideas? Call on the Chairman of your War Finance Committee. He's standing by.

Here's the Quota Plan:

1. Plant quotas are to be established on the basis of an *average* $100 *cash* (not maturity value) purchase per employee.
2. Regular Payroll Savings deductions made during the drive accounting period will be credited toward the plant quota.
3. Employees are expected to contribute toward raising the cash quota by buying extra 5th War Loan Bonds: 1—Outright by cash. 2—By extra installment deductions. 3—By extra installment deductions plus cash.

Example: JOHN DOE MFG. CO.—1,000 Employees

1,000 Employees x $100 . . $100,000 Cash Quota

Regular payroll deductions during the eight weekly payroll accounting periods of June and July. 30,000

$70,000 (to be raised by sales of extra Bonds).

BACK THE ATTACK—SELL MORE THAN BEFORE

The Treasury Department acknowledges with appreciation the publication of this message by

RAILWAY AGE

★ ★ *This is an official U. S. Treasury advertisement—prepared under the auspices of Treasury Department and War Advertising Council.* ★ ★

ARDCO

Railway Products Offer Big Savings

Ardco Drifting Valve . . .

COMPLETELY automatic—100% foolproof and economical in maintenance. It consists of two simple units. which are rugged, efficient and dependable.

Performance reports show that the new ARDCO Drifting Valve insures efficient lubrication at all times and maximum protection to cylinders, valves, packing and reciprocating parts against damage while the engine is drifting.

The large potential savings in locomotive operation warrant your immediate investigation. Blueprints and details furnished upon request.

Ardco Cylinder Cocks . . .

By automatically relieving excess pressure in locomotive cylinders, they are recognized as the best preventative against blown out cylinder heads and bent piston rods. They remain closed when engine is drifting, effectively keeping out all air and dirt, saving oil and affording maximum protection to cylinder walls.

Performance records of ARDCO Safety Cylinder Cocks prove that they measure up to all the requirements of modern operating conditions. You can effect big savings by installing them on your locomotives.

Ardco Rail Lubricators . . .

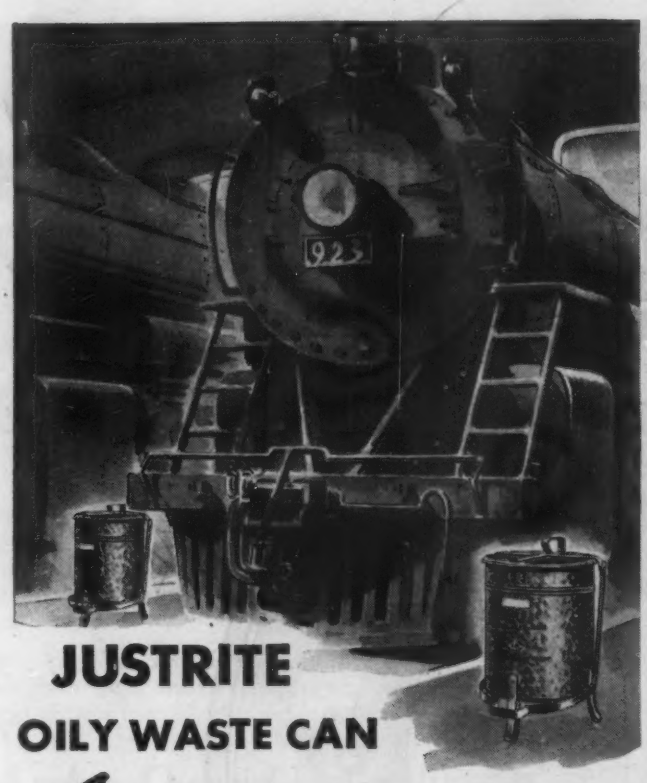
The dependability, efficiency and economy of ARDCO Automatic Lubricators insure maximum returns from rail lubrication.

Summer and winter—in blistering hot weather or zero temperatures when the right of way is covered with ice and snow you will always find an ARDCO Automatic Rail Lubricator working.

The ARDCO Manufacturing Company also manufactures the SESMO Rail and Flange Lubricator. This model consists of two compactly assembled units simple in design and ruggedly constructed. Performance of both the ARDCO and SESMO Lubricators proves that they are exceptionally economical to operate and maintain.

Recognition of the continued excellence of ARDCO'S war production is evidenced by the fact that ARDCO has just been awarded the Fourth Star for their Army-Navy "E" Flag.

ARDCO MANUFACTURING CO.
NORTH BERGEN, NEW JERSEY.



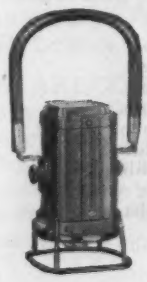
JUSTRITE
OILY WASTE CAN
A *Square* deal for the roundhouse

Protecting vital tools, equipment, supplies, and even roundhouses from fires is all in a day's work for the Justrite Oily Waste Can. It offers protection against fire . . . reduces the chance of fires even starting.

The Justrite Oily Waste Can is available in four sizes. The approvals of Underwriters' Laboratories, Inc., and the Associated Factory Mutual Fire Insurance Companies are your assurance that when Justrite is on the job for you . . . safety is right there too.

Made by the makers of . . .

THE JUSTRITE TWIN-BULB TRAINMEN'S LANTERN



This lantern is a favorite with trainmen everywhere because it gives the kind of light trainmen *must* have . . . a steady, powerful, smoke and fog piercing beam with the light to the sides from the same bulb at the same time. The twin-bulb feature in Justrite lanterns protects trainmen from the hazards of light failure.

Write for complete details and prices

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2063 N. Southport Ave., Dept. D-1, Chicago 14, Ill.

JUSTRITE *Safety Products*

SAFETY CANS · FILLING CANS · OILY WASTE CANS
APPROVED SAFETY ELECTRIC LANTERNS

MAKE Shorter WORK OF MAINTENANCE

Lyon's complete line of Shop and Storage Equipment provides engineered units that will step-up maintenance efficiency under present and post-war conditions. They make possible better control of tools and inventory . . . faster handling of materials . . . and better use of available working areas and manpower. Items shown are only a few of the many railroad-proved Lyon Products now available for prompt delivery.

LYON

METAL PRODUCTS, INCORPORATED

General Offices:
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Branches and Distributors in All Principal Cities

What About Post-War?

Do your post-war products include sheet metal or aluminum? Check Lyon's manufacturing and designing facilities.

GET TOGETHER DEPARTMENT

RAILROAD EDUCATIONAL SERVICE

For 45 years the Railroad Department — International Correspondence Schools — has been training ambitious railroad men the technique of their work. Nearly 300 railroads have agreements with the International Correspondence Schools to instruct their employees who are interested in technical training at reduced rates.

Courses In:

Railroad Apprentice Training
Air Brakes
Locomotive Firemen
Locomotive Engineers
Car and Locomotive Shop Work
Traffic Management
Accounting—Rate Clerk
Maintenance of Way
Transportation Salesmanship
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Telephony and Telegraphy

We Specialize in Railroad Apprentice Technical Training Courses Covering the Work Done by Each Craft.

Free Booklet on Request

INTERNATIONAL CORRESPONDENCE SCHOOLS
Railroad Department
Box 8816 SCRANTON, PA.

Educational Services for RAILROAD MEN

Maintenance of Way—
Mechanical—
Signal—
Operating—
Engineers and Firemen—
All Supervisors—

The Railway Educational Bureau
Omaha, Nebraska

FOR SALE

1—35 ton Plymouth, gasoline, new 1937.
3—21x28, 85 ton switchers, piston valves, superheated, Walscheart gear, 0-6-0.
2—25x30, 120 ton, 0-8-0 switchers, new 1922, tractive effort 49,500#.
2—20x26, 4-6-0 oilburners, new 1924-27.
2—Cabooses, serviceable condition.
1—Std. two-aspect red & green block signal.
1—Block staff machine—electrically operated.

Exporting & Importing Co.
P. O. BOX 2576
DALLAS, TEXAS

A Good Investment

For the duration or post-war—save demurrage, switching, extra handling costs, damaging foreign cars, etc.

80, Hopper, Double, 50-Ton
10, Hopper, Side-Discharge, 50-Ton
150, Refrigerator, 40-Ft., 40-Ton
16, Refrigerator, 36-Ft., 30-Ton
17, Ballast, Composite, 50-Ton
25, Box, 36-Ft., 40-Ton, Steel Ends
20, Dump, K & J Automatic, 16-Yd., 40-Ton
6, Dump, K & J Automatic, 20-Yd., 50-Ton
20, Flat, 40-Ft., 50-Ton
38, Gondola, Composite, 30-Ft. & 40-Ft., 40-Ton
10, Gondola, Steel, 50-Ton, High Side
30, Tank, 8000-gallon, 40 & 50 Ton Trucks

All cars are priced to sell!

IRON & STEEL PRODUCTS, INC.
39 years' experience
12486 S. Brainard Ave. Chicago 33, Illinois
"ANYTHING containing IRON or STEEL"

Robert W. Hunt Company

ENGINEERS
Inspection—Tests—Consultation
All Railway Equipment
Structures and Materials
General Office:
175 W. Jackson Boulevard
CHICAGO
New York-Pittsburgh-St. Louis

PATENT DEVICES WANTED

Experienced Sales Executive is desirous of acquiring patented devices for freight cars. Willing to invest limited amount of money in demonstrable low cost device of tested merit. ADDRESS BOX 670, RAILWAY AGE, 30 CHURCH STREET, NEW YORK 7, N. Y.

LOCOMOTIVES

1—16x24 American 50-ton saddle tank, 0-4-0
1—19-26 American 67-ton, separate tender, new 1923
2—21x24 Baldwin 78-ton side tanks, 0-6-0, rebuilt
4—23x30 American, 114-ton separate tender, 2-8-0, exceptionally fine condition
1—20-ton Vulcan, std. gauge, gasoline, rebuilt
1—45-ton Plymouth, std. ga., diesel, new 1939

CARS

10—20 cu. yd. Western dump cars, rebuilt
5—20 cu. yd. K&J dump cars, rebuilt
10—50-ton twin hopper coal cars
22—50-ton composite gondola cars
100—40-ton box cars, steel underframe, 36' long
50—40-ton box cars, steel underframe, 36' long
1—(Standard) Jordan Spreader car. Fine condition
1—Brill Model 55 comb. passenger & baggage car

WIRE WRITE PHONE

Thomas F. Carey Co., Inc.
120 LIBERTY STREET, NEW YORK 6, N. Y.
Telephone Barclay 7-1770

FOR SALE OR RENT

1—20-ton INDUSTRIAL 8-WHEEL STEAM LOCOMOTIVE CRANE. Rebuilt and fully guaranteed, 50' boom. A.S.M.E. Boiler.

Write Owner—BOX NO. 668, RAILWAY AGE, 30 CHURCH STREET, NEW YORK 7, N. Y.

IDEAS and INVENTIONS WANTED

Large corporation is interested in new ideas and developments in connection with railway mechanical equipment. For appointment, write BOX 669, RAILWAY AGE, 30 CHURCH STREET, NEW YORK 7, N. Y.

Use space in this Section, when in need of a man or looking for a position

Pittsburgh Spring & Steel Co.

1417 Farmers Bank Building, Pittsburgh, Pa.
Makers of Elliptic and Spiral **SPRINGS** of Every Description
Carbon, Vanadium, Silico-Manganese Steels
Licensed manufacturers under patents for "Coil-Elliptic" groupings

Washington, D. C. 824 Union Trust Bldg. | New York 3723 Grand Central Terminal | Chicago 1401 Fisher Bldg.

GOLD VAPOR-STEAM-ELECTRIC CAR HEATING SPECIALTIES

GOLD CAR HEATING & LIGHTING CO.
NEW YORK

Our truing shoes do the work while engines and cars are in service. This cut shows style for grooved tires and also shows the depth of grinding material.

WHEEL TRUING BRAKE SHOE COMPANY
DETROIT, MICHIGAN

Index to Advertisers

July 1, 1944

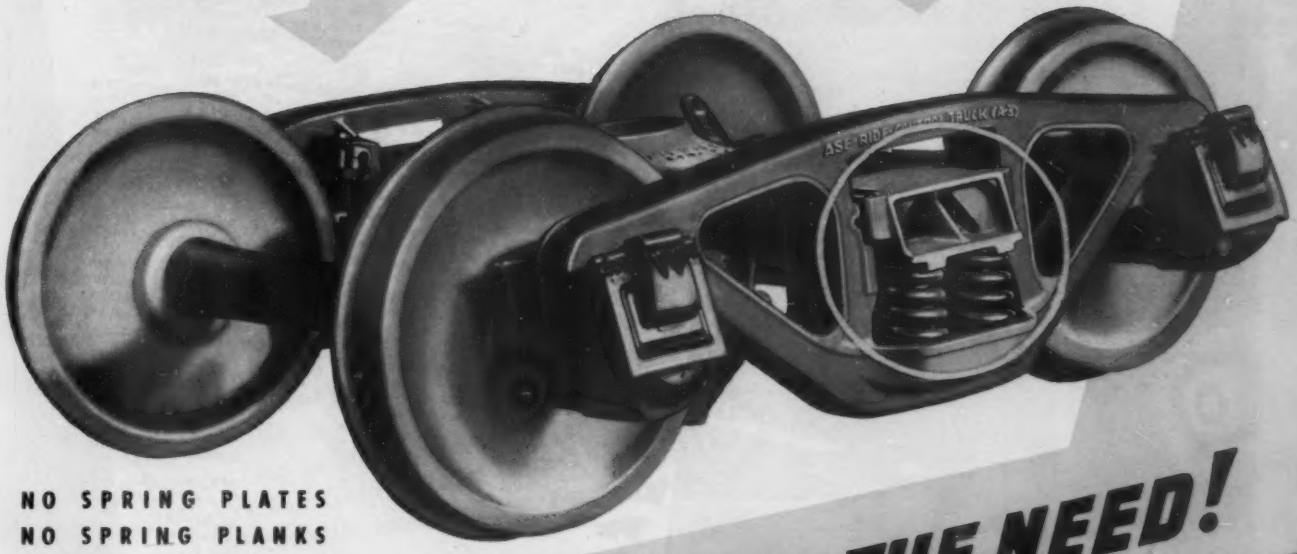
JULY 8, 1944

Railway Age

Founded in 1856

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 117, No. 2.

FOR Safety AND Speed



NO SPRING PLATES
NO SPRING PLANKS

Ride-Control FITS THE NEED!

High speeds are *safe* speeds with the A. S. F. Ride-Control Truck (A-3). Not only does it meet all A. A. R. strength requirements, but it is proved in performance as well. Every day, in general interchange service on American railroads, the Ride-Control Truck is proving itself safe in high-speed operation. This, from a truck that is in the price range of the conventional freight-car truck.

THE TRUCK FOR TODAY'S NEED—TOMORROW'S SPEED!

AMERICAN STEEL FOUNDRIES

CHICAGO

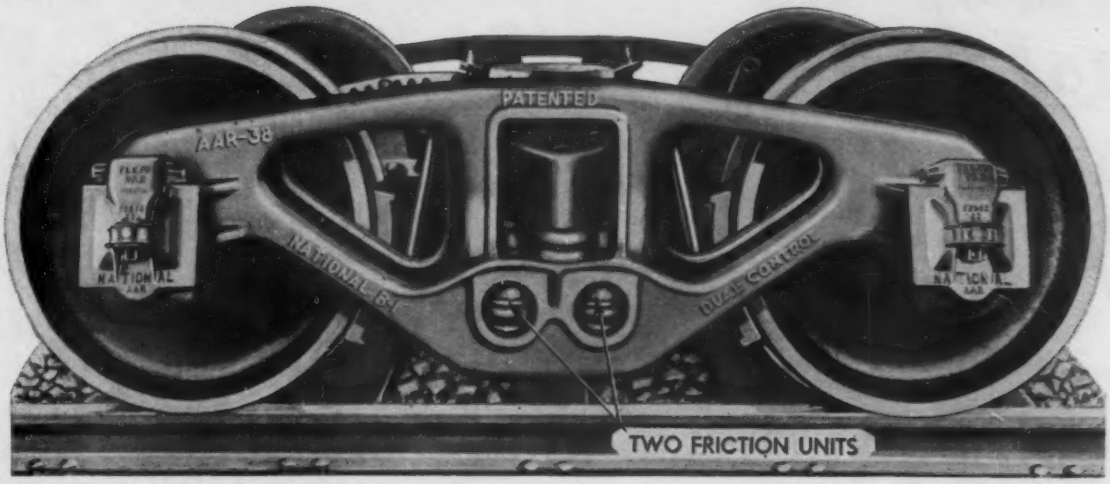
MINT-MARK OF FINE CAST STEEL

THROUGH THE DARKEST HOUR

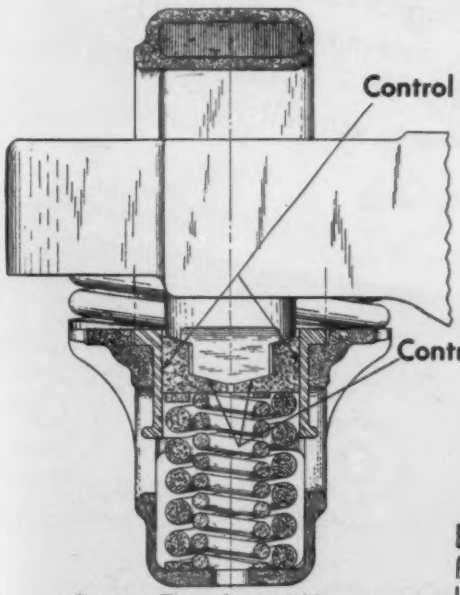
The railroads are part and parcel of the vital service of supply on which fighting men depend. They know first-hand the darkness of the hour before the dawn. • They follow the progress of the war by the nature and urgency of the burdens they carry—burdens that never lighten through the whole 24 hours of the day. • So through sunshine and shadow, railroad men serve the needs of war. Short on help, short on time, they know the value of every hour and every car. They know that a fighting nation counts on them to deliver the goods that Victory is made of—and doggedly, devotedly, they are sticking to that job. • Some day the dark hour will be behind us. Then our nation will look back and judge our fiber as a people on the courage and the will with which we faced it. • The railroads are working now so that when that day dawns they can, in clear knowledge of a job faithfully discharged, look forward with confidence to finer things to come.

ASSOCIATION OF
AMERICAN RAILROADS
ALL UNITED FOR VICTORY

National B-1 With Dual Control



NO Spring Plank or Spring Plates are required. This results in a saving of over 500 lbs. in unsprung weight and critical steel per car. Springs cannot lose out of side frame, and are protected against going solid. The Dual Control feature which controls both vertical and horizontal oscillations also prevents the wear between frames and bolster, which is common to other makes of trucks.



Section Thru Control Unit
Two Control Units in each frame

Vertical oscillation or spring bounce is friction controlled by pressure of wedges against steel wear shoes, during spring action. This protects the lading.

Horizontal oscillation is controlled by opposing angles of incline on the friction wedges, which center the bolster trunnions and resist forces which tend to throw the truck out of square. This is necessary for safety in high speed service.

Brake Beam Safety Ledges which are an integral part of the side frame are an A.A.R. approved brake beam support when the bottom rod goes through the bolster, and no other safety devices are required. This saves expense and weight of extra parts.

SPECIFY NATIONAL B-1 TRUCKS WITH DUAL CONTROL

NATIONAL MALLEABLE AND STEEL CASTINGS CO.
General Offices: CLEVELAND, OHIO
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Canadian Representatives: RAILWAY AND POWER ENGINEERING CORPORATION, LTD., *Toronto and Montreal*

Earning

Consider the capacity of the covered hopper car

in your post-war rolling stock planning!

This A.C.F.-built breadwinner of the rails — the Covered Hopper Car — ranks high with railroad men when the conversation turns to post-war freight cars. *Ingenious* when first pioneered by A.C.F. in 1911 — today *indispensable*, this bulk carrier has been developed in several specific designs for the speedy, convenient, LOW COST loading and unloading of special ladings such as cement, sand, powdered coal, lime and granular shipments generally.

a.c.f.

American Car and Foundry company

NEW YORK • CHICAGO • ST. LOUIS • CLEVELAND • WASHINGTON • PHILADELPHIA • PITTSBURGH • ST. PAUL • SAN FRANCISCO

AS with Hopper Cars – so with tank, ballast, box or any car that handles and hauls freight both *for and with profit!* For instance, ACF has designed and built 50 ton, 8000 gallon aluminum alloy tank cars with triple riveted seams for 95% nitric acid; welded aluminum alloy tank cars for aqueous solutions of nylon salts and many other "specials".

For the post-war period, with its accelerated trend to the special-purpose car, ACF with many years of experience designing cars for specific requirements can offer most helpful counsel–NOW. Truly, whether the purpose is a car for a *passenger* or a *package* – ACF can build *that car* – and is known to build it well!

TIMKEN

EASY POWER SHIFT

THE KEY to easy shifting

WITH NEW TIMKEN 2-SPEED AXLES

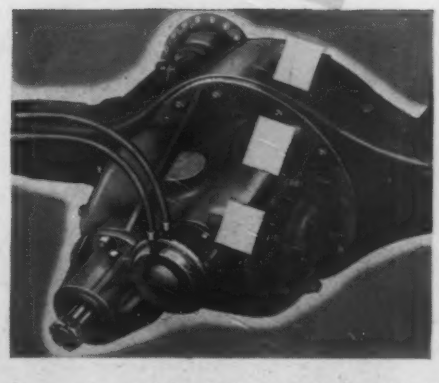
Timken's new Easy POWER Shift, available only with new Timken 2-Speed Double Reduction Axles, enables truck operators to meet today's highway transport demands for capacity loads and fast schedules.

Axle ratios can be changed instantly, under any driving conditions, merely by using the Dash Selector and releasing the foot throttle momentarily. Declutching is not necessary.

Combined axle and transmission shifts (gear splits) can be made as easily as transmission shifts alone.

Doubling the number of transmission ratios, with any gear combination instantly available, greatly increases truck performance—results in faster schedules, greater economy and increased earnings per ton-mile, and with less driver fatigue.

Write for descriptive folder.



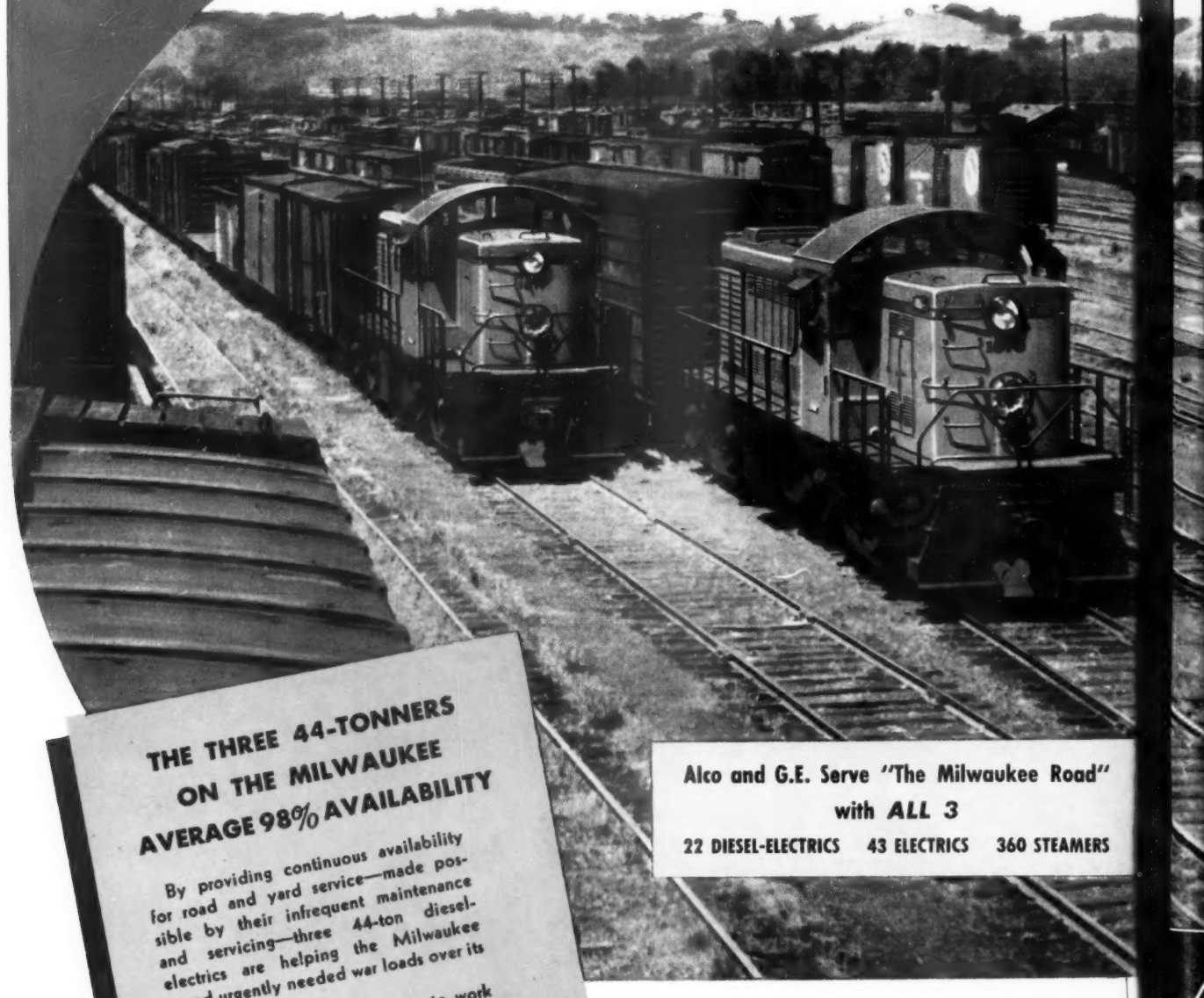
Power for shifting axle gears is furnished by a vacuum power chamber built into the axle. All working parts are enclosed.

38 YEARS OF AXLE ENGINEERING LEADERSHIP

TIMKEN AXLES

THE TIMKEN-DETROIT AXLE COMPANY, DETROIT 32, MICHIGAN
WISCONSIN AXLE DIVISION • OSHKOSH, WISCONSIN

Alco-G.E. diesel-electrics in



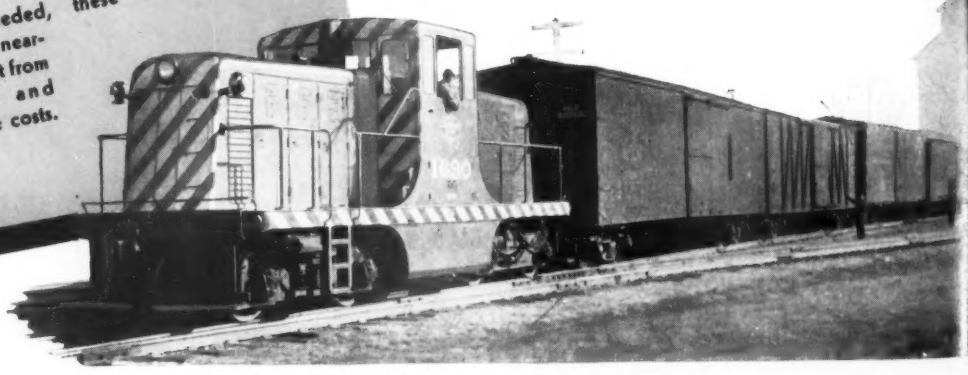
THE THREE 44-TONNERS ON THE MILWAUKEE AVERAGE 98% AVAILABILITY

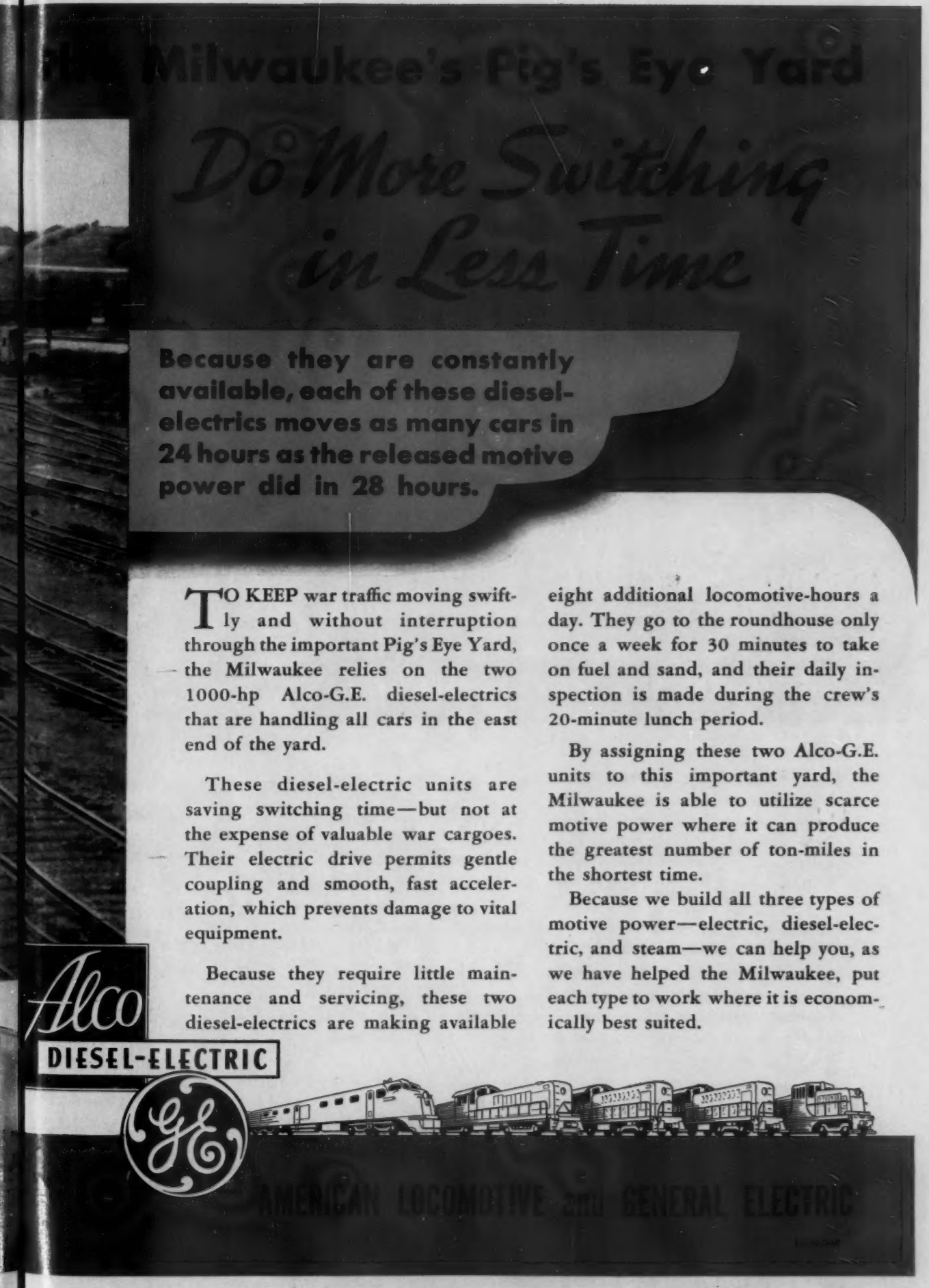
By providing continuous availability for road and yard service—made possible by their infrequent maintenance and servicing—three 44-ton diesel-electrics are helping the Milwaukee speed urgently needed war loads over its lines.

In addition to being ready to work whenever needed, these 44-tonners have slashed nearly 50 per cent from operating and maintenance costs.

Alco and G.E. Serve "The Milwaukee Road" with *ALL 3*

22 DIESEL-ELECTRICS 43 ELECTRICS 360 STEAMERS




Milwaukee's Pig's Eye Yard
Do More Switching in Less Time
Because they are constantly available, each of these diesel-electrics moves as many cars in 24 hours as the released motive power did in 28 hours.
TO KEEP war traffic moving swiftly and without interruption through the important Pig's Eye Yard, the Milwaukee relies on the two 1000-hp Alco-G.E. diesel-electrics that are handling all cars in the east end of the yard.
These diesel-electric units are saving switching time—but not at the expense of valuable war cargoes. Their electric drive permits gentle coupling and smooth, fast acceleration, which prevents damage to vital equipment.
Because they require little maintenance and servicing, these two diesel-electrics are making available eight additional locomotive-hours a day. They go to the roundhouse only once a week for 30 minutes to take on fuel and sand, and their daily inspection is made during the crew's 20-minute lunch period.
By assigning these two Alco-G.E. units to this important yard, the Milwaukee is able to utilize scarce motive power where it can produce the greatest number of ton-miles in the shortest time.
Because we build all three types of motive power—electric, diesel-electric, and steam—we can help you, as we have helped the Milwaukee, put each type to work where it is economically best suited.
Alco
DIESEL-ELECTRIC
GE
AMERICAN LOCOMOTIVE and GENERAL ELECTRIC

PRESSTITE *Extruded Seam Sealing Tape Seals Fuselage Joints of Lockheed's Giant "Constellation"*

Built to fly faster, farther, and with bigger loads than any other land transport now in production, Lockheed's giant 4-engined 8,800 horsepower craft recently broke the transcontinental record from Burbank to Washington. The fuselage seams of this great carrier are safely sealed against weather and pressure with Presstite Extruded Seam Sealing Tape.

Thus another famous American airplane joins the ranks that include the "Flying Fortresses," "Commandos" and many others in which Presstite Sealing Compounds are used.

Your own sealing problems may not be as complex as those in the aircraft field where extremes in temperatures and pressures, plus constant strains and flexings, are encountered. But it is Presstite's wide experience in developing sealers for industry that has made such wartime achievements possible.

Presstite's engineers are *sealing specialists*—continually developing sealing compounds to meet specific requirements of industry and the Armed Forces. We'll gladly work with you, too, on your present and postwar sealing problems.

A Partial List of Industries for Which Presstite has Successfully Developed Special Sealing Compounds:

For the Aircraft Industry:

Sealers for—
- Integral Fuel Tanks
- Fuselage Seams
- Drop-off, Expendable Fuel Tanks
- Gun Turrets
- Synthetic Glass
- Instruments
- Intercoolers
- Air Ducts
- Insulating Dissimilar Metals
- Seaplane Floats

For the Refrigeration Industry:

- Sealers for Domestic and Commercial Refrigerators
- Bonding and Sealing Low Temperature Insulation in Refrigerated Rooms

For the Railroads:

- Sealers for Insulating, Soundproofing and Weatherproofing of Railway Cars—Sealing Car Windows and Spot Welded Seams

For the Building Industry:

- Roof Coatings, Caulking, and Waterproofing Compounds

For the Shipbuilding Industry:

- Insulation Adhesive and Sealers—Rust Preventive Compounds

For the Automotive Industry:

- Special Adhesives and Sealers

For the Construction Industry:

- Sealers for Jointing Sewer Pipes
- Sealers for Waterproofing Excavation Work

Miscellaneous:

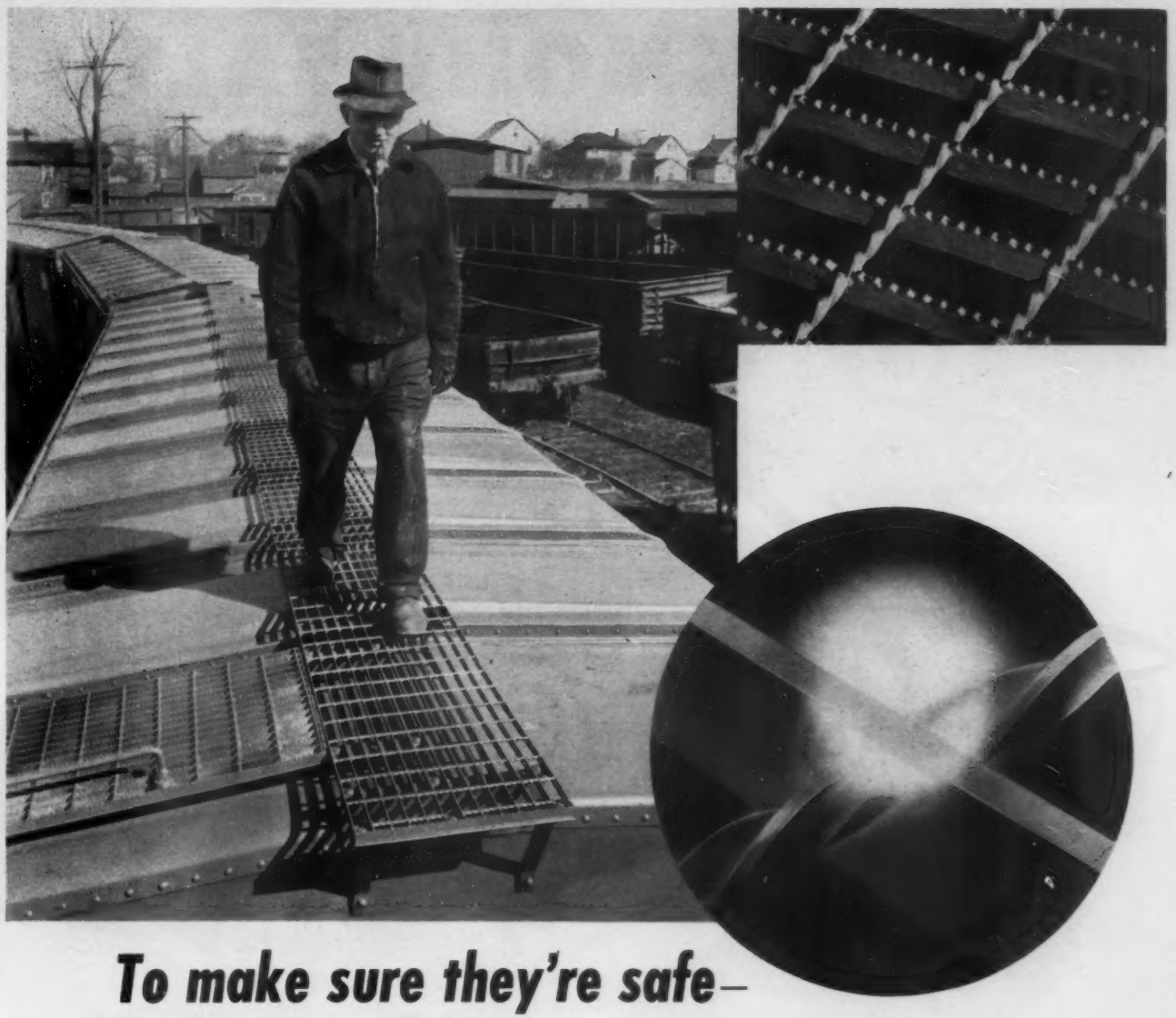
- For Glazing Greenhouse Windows
- Extruded Caulking Compounds
- Ammunition Paints
- Plus Many Special Products for the Army and Navy

Our Engineering, Technical, and Laboratory facilities are at the service of any industry with a sealing problem.

PRESSTITE Sealing Compounds

PRESSTITE ENGINEERING CO.
3954 Chouteau Ave., St. Louis 10, Missouri

Sales Offices: Los Angeles 21, Calif., 2145 Bay St.; Detroit 2, Mich., 6432 Cass Ave.



To make sure they're safe— make sure they're

BLAW-KNOX

ELECTROFORGED STEEL RUNNING BOARDS AND BRAKE STEPS

Freight moves faster when the trainman has "twisted bar" safety under foot. ¶ On Blaw-Knox Electroforged Steel Running Boards, he's as sure-footed as a cat. His moves, atop the car, are confident and swift. Naturally, inevitably — freight moves faster when the danger's less.

Note the twist! There's the secret of sure footing. The twisted cross bars are forced into serrated bearing bars, electroforged into one inseparable unit — light, strong, self-cleaning, long-lasting, safe!

BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY

2061 FARMERS BANK BUILDING, PITTSBURGH, PA.

This COMMONWEALTH 4-Wheel Passenger Car Truck

Assures SMOOTHER, FOR THE HIGH SPEEDS

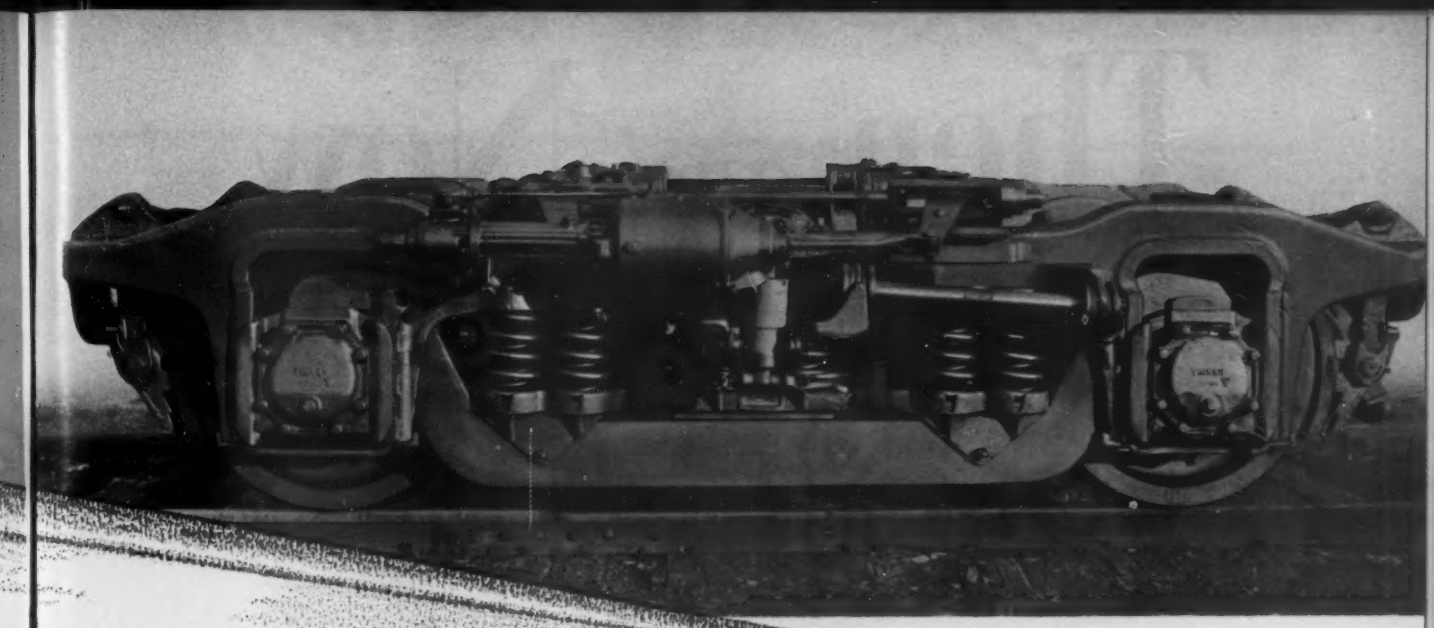
Especially designed for light-weight, high-speed transportation, these COMMONWEALTH 4-wheel Passenger Car Trucks are arranged with coil springs and shock absorbers, bolster anchors, and bolster roll stabilizers. These modern features assure the best possible riding conditions at all speeds, exceptional freedom from vibration and lateral sway, and greater passenger comfort and safety.

This modern Truck utilizes Commonwealth one-piece cast steel truck frame, cast steel bolster, and bolster roll stabilizer castings, providing greater strength with minimum weight, utmost serviceability at lowest maintenance expense.

The fact that America's finest trains ride on Commonwealth trucks is proof of their superior performance under every type of service condition.

GENERAL STEEL CASTINGS

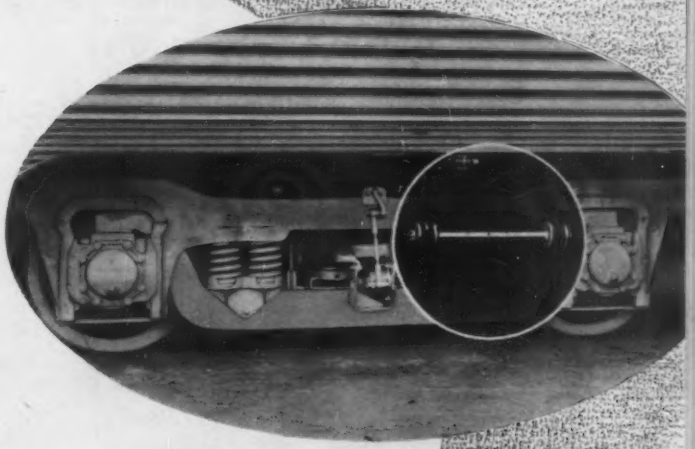
EDDYSTONE, PA. • GRANITE CITY, ILL.



QUIETER, SAFER RIDING OF TODAY—AND TOMORROW

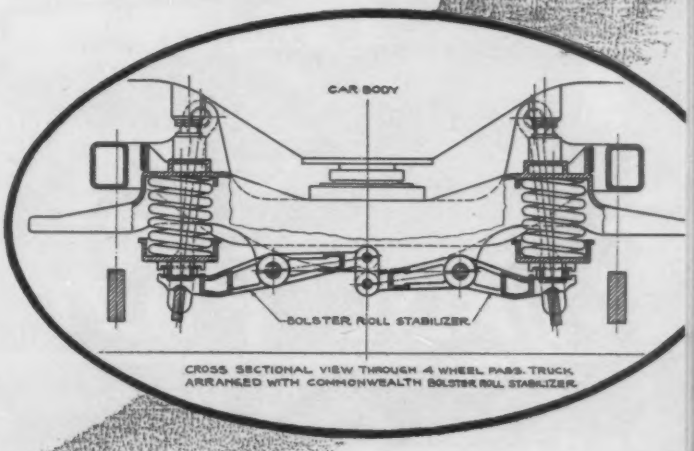
COMMONWEALTH BOLSTER ANCHOR

This Commonwealth device positively locates the truck bolster longitudinally with the truck frame, guides the vertical and lateral movement of the bolster, and eliminates metal to metal contacts by disposing of wear plates between bolster and truck transoms. The rods are anchored in rubber discs, cushioning the action of the bolster and assuring quieter riding.



COMMONWEALTH BOLSTER ROLL STABILIZER

The Commonwealth Bolster Roll Stabilizer was developed to prevent passenger car-body roll. It is composed of a split spring plank, the two separate parts of which are connected to each other and to the bolster so as to prevent the bolster from moving out of plane and overloading the springs. This feature results in positive mechanical control of car roll and allows the use of more flexible springs, further improving riding qualities.



CROSS SECTIONAL VIEW THROUGH 4 WHEEL PASS. TRUCK ARRANGED WITH COMMONWEALTH BOLSTER ROLL STABILIZER.

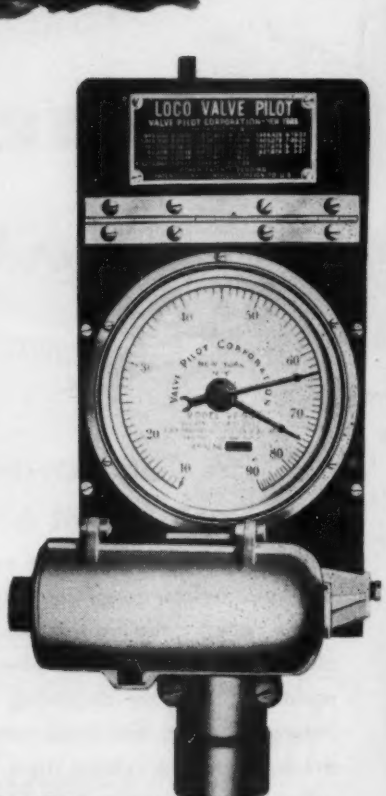
Then *and* Now

1863

In the age of empirical methods, the C.P. HUNTINGTON did yeoman service at a time when prophecy of the big articulated locomotives of today would have found no credence.

When the 4211 and her sisters came along, the primitive methods of the past century were inadequate.

The Valve Pilot with its indication and record of speed and cut-off was the answer.



1944

VALVE PILOT CORPORATION

230 Park Avenue, New York 17, N. Y.